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PAXSON LAKE: TWO NINETEENTH CENTURY AHTNA SITES IN THE COPPER RIVER BASIN, ALASKA

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A

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PAXSON LAKE: TWO NINETEENTH CENTURY AHTNA SITES

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ABSTRACT

Archeological excavations undertaken by the Bureau of Land Management at Paxson Lake in 1976 are described. Data from two sites--the Knoll Site and the Point Site--are interpreted in the context of the nineteenth century history, culture and archeology of the Ahtna, Northern Athapaskan Indians of the Copper River region, Alaska. The analysis demonstrates that the Paxson Lake sites primarily relate to caribou hunting and that, functionally, the Knoll and Point sites represent spring caribou hunting camps or stations. Comparisons with nineteenth century winter village sites previously excavated in the Ahtna area are presented, and it is concluded that significant variation is represented in the archeological record by the task-specific activities that constituted a single aspect of the traditional seasonal round.

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generation of Northern specialists as the time when the National Park Service pursued anthropological research in Alaska.

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CHAPTER 1. INTRODUCTION

This paper describes the results of archeological excavations undertaken by the Bureau of Land Management at Paxson Lake during the summer of 1976. Paxson Lake lies in the course of the Gulkana River, a major tributary of the Copper River, which was occupied traditionally by the Ahtna--Northern Athapaskan Indians of southcentral Alaska. Two sites at Paxson Lake--the Knoll Site and the Point Site--provide data for much of the discussion. Since these sites relate primarily to historic use and settlement of Paxson Lake, the time period which is the focus of this study is the nineteenth century. The significance of these data can be assessed in the context of their contribution to existing knowledge of Ahtna archeology pertaining to the historic period.

The study is ethnohistorical in its orientation--that is, it relies extensively upon ethnographic and documentary sources about the Ahtna in the interpretation of the archeological remains from Paxson Lake and their cultural and historical context. The usefulness of this approach for the study of Ahtna culture history has been demonstrated in the area previously by Anne Shinkwin (1979), who utilized the ethnographic reconstructions of Frederica de Laguna and Catharine McClellan (n.d.), nineteenth century documentary sources concerning the Ahtna, as well as oral history from the lower Copper River area in interpreting the archeological remains from Dakah De'nin's, an early nineteenth century village site near Chitina. While Shinkwin's objec-

tive in establishing a baseline for early nineteenth century Ahtna culture was part of a broad strategy in a direct historical approach to the study of the late prehistory of Northern Athapaskans in interior Alaska, the present study is much more circumscribed in its areal and temporal focus and derives its comparative perspective from ethnographic, documentary and archeological sources that pertain specifically to nineteenth century Ahtna culture. At Paxson Lake, we encounter in the archeological record for the first time Ahtna engaged in season-specific and task-specific activities associated with the hunting of caribou. It is important from both substantive and theoretical perspectives to determine whether significant variation is represented in this record by the activities that will be shown, on the basis of both ethnographic data and internal archeological evidence, to have constituted a single segment of the seasonal round.

Because the Paxson Lake sites belong to the historic period, it is also important to discuss nineteenth century developments in the Copper River region as historical context that will facilitate interpretation of the archeological remains. The historical narrative appears as Chapter 2, which reviews the growth of Ahtna participation in the fur trade during the Russian and early American periods of the nineteenth century. While it is hoped that the shared cultural materialist perspectives of archeology and economic history can eventually be integrated to address general problems in Ahtna ethnohistory, the detailed history of the fur trade included in the present discussion should be of immediate value to others interested in nineteenth cen-

tury Ahtna history, culture and historic sites archeology.

Chapter 3 summarizes ethnographic, environmental and ecological data that have particular relevance to the interpretation of the Paxson Lake sites. In addition, data concerning the historical distribution of the Nelchina caribou herd are presented, and previous archeological work in the Copper River area is discussed. Chapters 4 and 5 describe the archeological data recovered from the Knoll and Point sites, and Chapter 6 attempts to anchor Paxson Lake chronologically in the nineteenth century through a detailed consideration of the interpretive potential of glass trade beads represented in the collections, as well as by other internal evidence. Finally, in Chapter 7 comparisons with other historic period sites previously excavated in the Ahtna area are presented, and the overall significance of the described data are assessed in the context of broadening the archeological conceptualization of nineteenth century Ahtna culture to include caribou hunting patterns represented among the archeological remains from Paxson Lake.

CHAPTER 2. THE NINETEENTH CENTURY AHTNA AND THE FUR TRADE

In this chapter, I review the growth of Ahtna participation in the fur trade during the nineteenth century. From the perspective of historic sites archeology, it is of immediate interest to identify the sources of trade goods available to the Ahtna throughout the century, since it was through an institutionalized system of exchange--the fur trade--that items of Euro-American manufacture found their way into Native contexts and, eventually, archeological ones. It is also important to discuss nineteenth century developments in the Copper River area as historical context, since the Paxson Lake sites clearly belong to the historic period. Previous discussions of Ahtna history have traced the early landmarks of exploration and contact in the Copper River valley (VanStone 1955; de Laguna and McClellan 1981:643; n.d.; Shinkwin 1979:29-37; Reckord n.d.); here, the emphasis will be on economic history--specifically, the development of the Copper River fur trade during the Russian and early American periods of the nineteenth century.

Much of the nineteenth century unquestionably belongs to a "contact-traditional" stage in Ahtna history. As defined in the useful periodization of Northern Athapaskan historical experience outlined by June Helm and her students (Helm et al. 1975), two salient conditions characterize the period: first, contact with Europeans was predominantly through a limited number of agencies, such as the fur trade and the church, and, second, these contacts were infrequent--

"most of the Indians most of the time pursued their activities apart from the presence of Europeans" (Helm et al. 1975:311). For the Ahtna, the contact-traditional era begins with the establishment of a Russian trade center, Mednovskaia Odinochka, on the Copper River about 1821 (Helm et al. 1975:Synoptic Chart of Contact Events), an event which marks the beginning of a transitional period culminating in full commitment to a fur trade economy later in the century. Although representatives of the Russian Orthodox Church made direct contact when the Ahtna visited trade centers situated on the coast, they never established a mission along the Copper River, and throughout the nineteenth century, Ahtna experience with Europeans and, after 1867, Americans was channeled almost exclusively through agents of the fur trade.

The Russians abandoned Mednovskaia Odinochka in 1850, and, although trading expeditions were scheduled to the Copper River as late as the early 1870s, the Ahtna pursued everyday activities apart from the sustained presence of Russian or American traders throughout the second half of the century. In contrast to contemporary developments among neighboring Tanaina, Eyak and Chugach groups on the coast, there was no significant "gathering-in" of Ahtna around a trade center, and not until the end of the century can it be said that anything like a white settlement had been established in Ahtna territory. Indeed, Ahtna villages and households retained a traditional appearance and character until the turn of the century (Remington 1939:96-7; Koehler 1900:609; Cashman 1900:822-5; Castner 1900:704), reflecting the indirect nature of the contact situation during the early American period.

Fundamental reorientations to the natural and sociocultural environments nevertheless attended the advent of the contact-traditional era--a universal consequence whenever the fur trade was adapted to Northern Athapaskan hunting-gathering economies. Although such changes can be inferred from the growth of Ahtna participation in a fur trade economy, in the following discussion I will be concerned with the major historical developments of the fur trade period and not the nature of the resultant cultural and societal changes per se. Two outstanding events close out the century and discussion of the fur trade era: after nearly a decade of decline, furs reaching coastal trade centers from the Copper River were of little value to American traders by 1898, the year which also brought a "shock intrusion" of white miners to the Copper River valley seeking an "all-American" route to the gold fields of the interior. These two events--the stampede of '98 and the collapse of the fur trade at the end of the century--foreshadow major developments during the "government-commercial" era of the twentieth century and conclude discussion of the contact-traditional stage in Ahtna history.

THE RUSSIAN-AMERICAN COMPANY AND DEVELOPMENT OF THE COPPER RIVER FUR TRADE, 1799-1867

A common generalization about the early history of the Copper River is that, despite the lure of peltry and reports of rich mineral deposits, hostility on the part of the Native inhabitants frustrated Russian efforts to explore the region fully, and, subsequently, exploit

its valuable resources. Although consistent with the belief among the Russians that the Ahtna tended to be somewhat obstreperous (Doroshin n.d.:37), this interpretation is curiously at odds with the ease with which the Russian-American Company established a trade center, Mednovskaia Odinochka, on the mid-course of the Copper River before 1822 and the generally peaceful relations that characterized the thirty-year period during which a Russian trader was assigned permanent residency on the Copper River. We must wonder what sustained Russian interest in the region, if not the pecuniary motivations of the fur trade, and conclude that a critical re-evaluation of the Russian-American Company's role in the development of an inland fur trade and its relations with the people of the Copper River is long overdue.

During the period of the Russian-American Company's first charter (1799-1821), the geographical significance of the Copper River as a means of communication with vast, unexplored regions of the interior was generally understood. There is record of the travels of Russian hunters and traders on the Copper River during the final decade of the eighteenth century, and in the early 1800s, the Russian-American Company sponsored several explorations to confirm some of the earlier reports. Of these, the expedition of Afanasii Il'ich Klimovskii in 1819 was the most important, since it provided the company with an accurate sketch of the Copper River country, an assessment of fur resources available in the region and a brief description of the Native inhabitants.

By the early 1820s, officials of the Russian-American Company en-

tertained vague forebodings about the vulnerability of the remote interior of Russian America to expanding British commercialism in the far northwest of British North America. Exploration and settlement of the Copper River, it was believed, was a logical means of strengthening Russian territorial claims to the interior of the continent and preventing British acquisition of territories west of the Mackenzie River drainage. While the subject of Hudson's Bay Company and Russian-American Company competition on the Northwest Coast of America has received somewhat greater attention in the literature, the implications of this rivalry for shaping Russian-American Company policy toward the interior and the Copper River in particular have been less well understood. Although a treaty defined a common boundary between Russian and British territories in 1825, competition between the two great trading monopolies for the fur trade of the far northwest spurred Russian interest in the Copper River and development of the fur trade of that region throughout the second quarter of the nineteenth century.

In 1850, the Russian-American Company abandoned Mednovskaia Odinochka on the Copper River. Although the company desired to maintain its trade relations with the people of the Copper River, after 1850 the focus of the company turned to the Yukon River as the means of monitoring British influence in the interior fur trade. The failure of the Russian-American Company to challenge Hudson's Bay Company occupation of Ft. Yukon in 1847 demonstrated the company's limited ability to guarantee the sanctity of Russian American frontiers and no doubt contributed to the Russian government's decision in the 1860s

to sell its possessions in America to the United States.

Russian Knowledge about the Copper River before 1820. The Russians first learned about the people of the Copper River in 1783 when Leontii Nagaev, who participated in Potap Zaikov's trading expedition to Prince William Sound (Tikhmenev 1979:1-6), briefly explored the delta of the Copper River and learned from the Chugach about the Iullit, who lived along the banks of the Copper River twenty days' journey from the coast. Nagaev did not meet any Copper River Natives at this time (Tikhmenev 1979:5), and although it is possible that Ahtna visited Russian traders soon after outposts were established in Cook Inlet and Prince William Sound, the first recorded instance of contact with the people of the Copper River does not appear in the literature until 1794, when the Lebedev-Lastochkin Company sent thirteen workmen under the supervision of Samoilov to the Copper River from Cook Inlet (Tikhmenev 1978:42; Teben'kov 1981:21-2; Doroshin n.d.:37).[1] Although Samoilov's intent probably was to pass the winter of 1794-95 among the Ahtna, collecting furs and learning more about their country, we actually know very little about the expedi-

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1. Samoilov's given name is not recorded. Bancroft (1960:350) refers to him as "the navigator of the Lebedev Company," and George Vancouver (1967:Vol. 3, p. 192) writes, after visiting Konstantinovsk Redoubt June 19, 1794, that "[h]ere we were introduced to another gentleman named Smyloff, who presided over the maritime part of this mercantile company...." On July 10, 1794 (Julian calendar), Egor Purtov, on his return from a hunting expedition to Yakutat Bay, met "seaman" Samoilov near Nuchek (Tikhmenev 1979:52). The earliest reference to Samoilov is for the year 1793 (Tikhmenev 1979:32).

tion, other than that its route of travel was by way of the portage from the Matanuska River to Tazlina Lake (Teben'kov 1981:21). All of the workmen were killed, and Samoilov was tortured to death before the expedition reached the coast the following spring.[2]

As far as we know, the ill-fated expedition was the Lebedev-Lastochkin Company's final effort to expand its commercial base of operations beyond the limits of upper Cook Inlet. In 1793, Lebedev's men

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2. According to Tikhmenev (1978:42), Aleksandr Baranov first heard in Cook Inlet that Copper River Natives were responsible for the attack but concluded, after an investigation of the matter at Nuchek in 1795, that "Kol'chane" were provoked to murder because of outrages committed by Samoilov and his men. "This view was supported by the fact that both groups of natives [Copper River people and Kol'chane] came to Baranov, bringing furs for barter, and generally showed themselves well disposed toward the Russians" (Tikhmenev 1978:42).

Historian Richard Pierce, in a footnote to this episode (Tikhmenev 1978:42n), questions Tikhmenev's impartiality in interpreting these events. Pierce cites a passage in a letter from Archimandrite Iosaf to Grigorii Shelikhov, dated May 18, 1795, which seemingly suggests that the Chugach, at Baranov's instigation, were responsible for the attack and not the Ahtna. I do not see in the full text of Iosaf's letter (Tikhmenev 1979:77-85) evidence that Baranov's plotting with the Chugach, if true, can be directly linked to the Samoilov affair. Iosaf (Tikhmenev 1979:82) seems to be referring, instead, to a Chugach raid on "Greek Island" near Resurrection Bay, in which ten of Lebedev's men were killed (Tikhmenev 1979:76). It is unlikely that the fate of Samoilov and his men was known, at least on Kodiak, by the date of Archimandrite Iosaf's letter.

In addition to Tikhmenev's account, possibly two other versions of the Samoilov disaster have come down to us in the literature. Gavriil Davydov's description of the murder of Russians at the hand of Copper River Natives probably relates the events of 1794-95, although Davydov gives us neither the date nor the identity of the men who took part in the expedition (Davydov 1977:189). Petr Doroshin (n.d.: 37-8) tells a second version, which he heard from the baidarshchik of the Copper River odinochka during one of Doroshin's visits to Nuchek between 1848 and 1852. Both accounts relate how the Ahtna revenged the provocative actions of the Russian hunters.

had pre-empted the Golikov-Shelikhov Company in Prince William Sound by constructing Konstantinovsk Redoubt on Hinchinbrook Island (de Laguna 1972:348) and at about the same time had dispatched Vasilii Ivanov on the first overland exploration of southwest Alaska (VanStone 1979:44). At the time of Samoilov's expedition in 1794, the company faced growing opposition from Aleksandr Baranov, chief manager of Grigorii Shelikhov's company--a bitter rivalry discussed at length in Hubert Howe Bancroft's History of Alaska (1960:334-50). Forced to contend with competition from Shelikhov's men, dissension within its own ranks and an uncertain means of resupply from Okhotsk, in 1797 the Lebedev-Lastochkin Company abandoned Konstantinovsk to its chief rival (Tikhmenev 1978:46; Khlebnikov 1973:20). In 1798, the last of Lebedev's men sailed from Cook Inlet, at which time Baranov occupied Nikolaevsk Redoubt at the mouth of the Kenai River (Tikhmenev 1978:46; Fedorova 1973:127, 130).

With competition in the gulf coast region eliminated, an immediate impetus for exploration of the interior of Russian America lapsed, and by all indications Samoilov's expedition had few consequences for the development of an inland fur trade. Nevertheless, scattered references in early Russian sources indicate that Ahtna were at least occasional visitors at Russian trade centers on the coast immediately after 1794 (Tikhmenev 1978:42; 1979:47; Davydov 1977:192). Samoilov's expedition, then, occurred at the time when the people of the Copper River were first learning about the Russians in Cook Inlet and Prince William Sound and marks the beginning of the early contact period in

Ahtna history.[3]

From this early period, one of the first references to Ahtna trade has to do with a trade fair, or series of such fairs, which took place in the fall of the year in the lakes district of the plateau west of the Copper River valley. Gavriil Davydov, who last visited Russian America in 1806, tells us that the inhabitants of the Copper River would give in trade "copper, iron wedges (which they use instead of axes), prepared elk skins and some other goods" to the Tanaina, who traveled up the Susitna River to its headwaters from Cook Inlet (Davydov 1977:199). The copper was native copper and a local product, but the iron wedges, Davydov continues, "naturally have been passed from hand to hand and originated either in the United States or from Hudson's Bay."

Although we have no means of determining the source of Davydov's information about the Native people of upper Cook Inlet and the Copper River, it is possible that the intelligence about the interior

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3. I give priority to the first recorded instance of direct contact with Europeans in Ahtna territory in defining the beginning of the historic period (McClellan 1964:5; Helm et al. 1975:307). Helm and her colleagues (1975:Synoptic Chart of Contact Events) give 1783 as the date of this important event, apparently in reference to Nagaev's discovery of the mouth of the Copper River in that year. As suggested in the text, if encounters between the Russians and the Ahtna in the latter's territory occurred prior to 1794, they have gone unrecorded.

In addition to Samoilov's expedition, chronologies of Copper River exploration, beginning with Teben'kov's in 1852 (Teben'kov 1852:22-4), mention the hunter Tarkhanov (Tarakanov?), who reached the Copper River on skis from Yakutat Bay in 1796. Nothing has been written about Tarkhanov's accomplishments, however, and the significance of his explorations remain undetermined.

trade network was based on first-hand information gathered by the trader Potochkin in 1798-99 (Liapunova and Fedorova 1979:53-4) and the trader Bazhenov, who set out for the Copper River in 1803 and again in 1805 in search of the source of native copper (Doroshin n.d.: 38; Teben'kov 1981:22; Chernenko 1967:9; cf. Tikhmenev 1978:86). According to Kirill T. Khlebnikov's summary of the earlier expedition, Potochkin left Konstantinovsk Redoubt on September 12, 1798, to explore the lower Copper River, describe the products of the region and enumerate the population of villages encountered along the way (Liapunova and Fedorova 1979:53-4; Chernenko 1967:9; cf. Khlebnikov 1973:23). Potochkin reached the mouth of the Chitina River sometime after October 3, and in January of 1799, the expedition was forced by heavy snow to stop over at the village of Kalakhis, possibly the Eyak village near Alaganik (cf. Allen 1887:38-9, map). At Nuchek on March 6, 1799, Potochkin handed over the journal of the expedition to Ivan Kuskov, Aleksandr Baranov's able assistant, then in charge of Konstantinovsk Redoubt.

Certainly the exploits of Bazhenov, whom Davydov refers to as a "second Mungo Park," were well known in the colonies around 1805, since they are mentioned by Iurii Lisianskii (Lisiansky 1968:188), commander of the Neva during the first Russian round-the-world voyage (1803-06), as well as by Davydov (1977:200). In addition to samples of copper ore, Bazhenov brought reports back to Nuchek of "an abundance of deer, black bear, muskrat and beaver" (Chernenko 1967:9; Ianovskii n.d.). Bazhenov's second expedition originated from Cook

Inlet (Doroshin n.d.:38), but the indefatigable explorer never discovered the source of native copper. According to Davydov (1977:200), Bazhenov was killed by Natives during a third expedition to the Copper River, presumably sometime before 1806.[4]

Whatever the specific source of Davydov's intelligence about the interior trade network, the Russian-American Company was not able to obtain further information concerning its significance until Afanasii Il'ich Klimovskii completed his important exploration of the Copper River in 1819.[5] Khlebnikov's summary of the expedition (Liapunova and

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4. Bazhenov's and Potochkin's given names are not mentioned in the secondary sources. I suspect that an episode concerning the murder of the baidarshchik Kostia Galaktionov and his interpreter Alesha sometime prior to August of 1805 is somehow related to Bazhenov's activities, but a direct connection between Galaktionov and Bazhenov is not established among the sources I have cited (Tikhmenev 1979: 152; Doroshin n.d.:38-9; cf. Davydov 1977:169-70). According to the version of the murders told to Petr Doroshin by older residents of Nuchek around 1850, Copper River people killed Galaktionov above Eyak territory in winter while the trader was passing through on his way to the coast.

In a letter to Baranov dated September 24, 1805 (Tikhmenev 1979:152), Ivan Repin, manager of Konstantinovsk Redoubt, reported that the Copper River chief Matvei had brought the murderer of Alesha and two escaped Native workers to Nuchek on August 18 and promised to bring the murderer of Galaktionov down later that fall. Chief Matvei brought few furs to barter, explaining that he had not yet met with the people of the upper Copper River for the purpose of trade.

5. Authors writing about the early history of the Copper River have confused Afanasii Il'ich Klimovskii with his brother Andrei Il'ich, and I wish to thank Ricard A. Pierce for clarifying this point for me. Afanasii, Andrei and a third brother, probably Nikolai, were the sons of Il'ia Fedorovich Klimovskii, an Irkutsk townsman, who in 1805 petitioned Nikolai Rezanov to stay in Russian America, presumably to remain with his American family. There was also a sister (Fedorova 1973:339). Andrei Il'ich gained early recognition as one of three Creole boys sent by Baranov with Iurii Lisianskii on board the Neva

Fedorova 1979:63-5), as well as Ferdinand von Wrangell's later assessment of Klimovskii's accomplishments (Wrangell 1980:81), indicate that the expedition ascended the Copper River as far as Upper Ahtna territory. Klimovskii is credited with the first detailed description of the lower Copper River (Brooks 1953:235), and the census figures pertaining to the Lower Ahtna villages that date from 1819 (Petrof[f] 1900:94; Tikhmenev 1978:160-1) are likely his work. It is particularly interesting that, from Klimovskii's sketch maps and notes, Wrangell (1980:81) was later able to outline in rough detail the travel routes and meeting places that connected the trade of the Tanaina, the Ahtna and Indians living further north in the Tanana River drainage. These data Wrangell included on his famous map of Northwest America (Wrangell 1980:endpapers).

Klimovskii's expedition was contemporaneous with Petr Korsakovskii's explorations of southwest Alaska and the establishment of Novo-Aleksandrovsk Redoubt on Nushagak Bay. Like the expeditions to southwest Alaska in 1818 to 1819, the Russian-American Company's renewed

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to study at the Kronshtadt Navigation College (Khlebnikov 1973:51, 123). It is Khlebnikov (Liapunova and Fedorova 1979:63-5) and the correspondence of the Russian-American Company (Russian-American Company Records, Correspondence of the Governors General, Communications Sent [hereafter abbreviated RACR, CS], Vol. 2, fos. 222-3, 23 May 1821) that establish Afanasii Il'ich as the leader of the expedition to the Copper River in 1819. In 1821, Chief Manager Matvei Murav'ev directed Klimovskii to join Vasil'ev's expedition to Bering Strait as interpreter (ibid.), and by 1825, Klimovskii had been appointed manager of Konstantinovsk Redoubt (RACR, CS, Vol. 4, fos. 185-6, 12 January 1825). Considering the Russian propensity to abbreviate given names, it is understandable how confusion about the two brothers has developed.

effort to explore the Copper River region was motivated by newly conceived plans for the development of an inland fur trade. Modeled after the successes of British and American firms operating elsewhere in North America, the plan promised to usher in an entirely new phase in Russian-American Company enterprise by directing company resources away from a historical dependence on the maritime fur trade to organizing the undeveloped trade of the interior. Chief architects of the new plan were the naval officers Captain-Lieutenant Leontii A. Hagemeister and Lieutenant Semen Ianovskii, who in 1818 and 1819, respectively, succeeded the aging Aleksandr Baranov as the next two chief managers of the Russian-American Company.

In a special memorandum concerning the Copper River sent to the Board of Directors of the Russian-American Company, Ianovskii later wrote that the travels of Bazhenov and Klimovskii confirmed that the "trade in fur-bearing animals" in the Copper River region, "especially in river beaver, can be significantly profitable for the company" (Ianovskii n.d.). This was particularly important intelligence from Ianovskii's perspective as chief manager, because it was his firm belief that the interior fur trade, especially that in beaver pelts, was the only remaining reserve of furs that could compensate for the "yearly decrease of the catch of sea otters, which constitutes one of the main incomes of the Russian-American Company...." Moreover, the inhabitants of the Copper River had already shown interest in establishing trade relations with the company in "former times [when they had] brought river beaver in great quantity and some foxes to the

Konstantinovsk fort on Nuchek [Hinchinbrook] Island and bartered...." Although Ianovskii conceded that the company's initiatives in the Nushagak Bay region were significant first steps in the development of an interior fur trade, he nevertheless urged the Board of Directors to undertake special efforts in expanding the company's trade along the Copper River. Ianovskii's specific recommendations concerning how this goal was to be achieved will be taken up later in the context of the Russian-American Company's reaction to impending negotiation of the treaty of 1825 with Great Britain.

Ianovskii's assessment of the financial predicament of the Russian-American Company and his opinions concerning a possible solution to that dilemma were likely responsible in part for the belief, prevalent among company officials in St. Petersburg after 1822, that the great interior of Russian America was indispensable for the continued stable existence of the company. Little wonder that during the early 1820s, when the question of a boundary between Russian and British possessions in America was being discussed for the first time in London and St. Petersburg, company officials should view territorial concessions at the diplomatic bargaining table as a threat to the future financial success of the company and "needless" concessions. By 1820, the Russian-American Company had gained important geographical knowledge to the effect that the Copper River was the only practical means of communication with the interior along the entire great arc of the Pacific north of the Stikine River. Consequently, the Copper River assumed special significance for company officials concerned

with the outcome of negotiations aimed at delimiting the extent of Russian sovereignty in North America. Within the context of the boundary question and the sudden interest shown in a little-known region of Russian America, it is particularly interesting that the earliest information to have accrued about the Native people of the Copper River had to do with their position as middlemen in a complex trade network linking the coast with vast and, at least for the Russians, unexplored regions of the interior.

The Convention of 1825 with Great Britain. The reports of Bazhenov and Klimovskii were the latest information about the Copper River available in St. Petersburg at the time that the boundary question became an important issue for the Russian government. The entire boundary question had been prompted by Aleksandr I's controversial ukase of 1821, which unilaterally defined the extent of Russian sovereignty in the North Pacific (Huculak 1971:25-50; Kushner 1975: 25-42). Great Britain's objections to provisions of the tsar's edict initiated discussions in 1822 (Huculak 1971:52) that led to the Treaty of February 25, 1825, establishing the interior Anglo-Russian boundary (i.e., that portion north of Mt. St. Elias) at the 141st meridian. Naturally, the two great trading monopolies--the Hudson's Bay and Russian-American companies--as potential rivals for the fur trade of the far northwest, were very much concerned with influencing their respective governments' positions regarding the boundary issue.

The Hudson's Bay Company, which in 1821 had combined with the

Northwest Company to inherit the latter's interest in the far northwest of British North America, desired a boundary which would prevent "an extension of Russian dominion as far eastward as to interfere with the trade of the Hudson's Bay Company along the Mackenzie River and its tributaries" (Huculak 1971:61, quoting Alaska Boundary Tribunal 1903:Vol. V, p. 28). Fort Good Hope, established on the Mackenzie at 66° 16' North Latitude, was the Northwest Company's most northerly outpost in 1805. In 1823, the Hudson's Bay Company moved the post downriver, even while the boundary question was being discussed in St. Petersburg. Although British traders had not expanded their establishments beyond the Mackenzie River drainage by 1825, it was believed that their outposts had, by the eve of the convention with Russia, attracted the trade of Indians living west of the "Rocky Mountains." The British government's position with regard to the interior boundary was formulated only after consultation with Hudson's Bay Company deputy governor John H. Pelly (Huculak 1971:70-1), who in 1823 traveled to London to present his company's views personally to Foreign Minister George Canning (Barratt 1975:39).[6]

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6. Pelly's position on the boundary question is sketched in a letter to Canning, dated January 8, 1824 (Alaska Boundary Tribunal 1903:Vol. II, p. 150):

> If it is considered proper to fix at present the interior boundary, I would suggest a line drawn from the above-mentioned point at Chatham Straits [sic] due north until it strikes the range of mountains which separate the waters (being the supposed continuation of the range of the Rocky Mountains), and thence to follow the ridge of these mountains to the Frozen Sea.... This is the greatest conces-

Unlike the Hudson's Bay Company experience, the Russian-American Company's response to impending negotiation of the boundary strained the relationship between company officials and their government. According to S. B. Okun (1951:88), "the interests both of the stockholders and of the directors were at complete variance with the appeasement policy pursued by the tsarist government on the American continent." Perhaps in anticipation of the government's willingness to sacrifice company interests in North America for larger foreign policy goals in Europe (Okun 1951:86-93, 114), but certainly with an eye toward strengthening Russian territorial claims to northwest America beyond the continental fringe, the Russian-American Company backed various proposals for the exploration of unknown regions of Russian America between 1822 and 1825 when the boundary question was under consideration.

One such proposal called for coastal and inland explorations and was submitted to the Navy Staff by Lieutenant Vladimir P. Romanov in 1823 (Barratt 1975; Okun 1951:111-12; Chernenko 1967:9; Tikhmenev 1978:177). A former employee of the Russian-American Company, who had sailed with Mikhailo N. Vasil'ev to Bering Strait in 1819-22 (Barratt 1975:29-30), Romanov proposed exploration of the unknown

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> sion which I think it would be advisable to make to Russia with regard to the interest of the British fur trade, and it would be desirable, as the means of preventing the risk of collision between the traders of the two nations, if Mount [St.] Elias on the coast at 60° north latitude was taken as the boundary point, from whence the line of longitude should be drawn.

northern coast of Russian America from Icy Cape eastward, presumably, to the Mackenzie River delta. More interesting for our purposes, Romanov suggested that an overland expedition from the Copper River to Hudson Strait and northward to the Arctic Ocean be undertaken by the government as well (Barratt 1975:41).[7] Although Romanov's proposals garnered support from Russian-American Company officials in St. Petersburg (Barratt 1975:34; Okun 1951:111-12), and even though a similar plan for arctic coastal exploration was backed privately by Count Nikolai Rumiantsov in 1824 (Tikhmenev 1978:177), none of these plans received sponsorship, either from governmental or private sources.

Perhaps because the Naval Ministry never acted on Romanov's proposals, the Russian-American Company presented its own plan for an expedition to the Copper River, possibly as early as 1824. Details about the proposed expedition are sketchy, but in later correspondence (RACR, CR, Vol. 4, fo. 416, 27 March 1825), company officials wrote that they had "intended to schedule an expedition up the Copper

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7. In "The Russian Interest in Arctic North America: The Kruzenshtern-Romanov Projects, 1819-1823," Glynn R. Barratt (1975) interprets the proposed starting point of Romanov's plan for inland exploration as the Coppermine and not the Copper River, as stated here. I do not see a basis for departing from earlier commentators (and their translators) on Romanov's proposals (Okun 1951:111-12; Chernenko 1967: 9; Tikhmenev 1978:177), who consistently refer to the Copper River, to revise this important point of geography. Certainly, the traditional interpretation is consistent with and more to the point of Barratt's own argument--namely, that Russian interest in the far northwest during the early 1820s was stimulated by rivalry with the Hudson's Bay Company for a potentially rich fur-producing region.

River to the Rocky Mountains in order to remove the claims of the British on it and to strengthen our right by means of timely occupation of several places in that region with fortified outposts." The plan appears to have drawn heavily upon the ideas of Semen Ianovskii, who had outlined a means for settlement and occupation of the Copper River in a special memorandum written for the Board of Directors of the Russian-American Company sometime after his return in 1822 to St. Petersburg (Ianovskii n.d.).

Ianovskii suggested that Konstantinovsk Redoubt be relocated from its "undesirable" location on Hinchinbrook Island in Prince William Sound to a site on the lower Copper River which would still be accessible from the coast, arguing that "it would be possible to become acquainted and carry out trade with the most distant inhabitants living in the upper reaches [of the Copper River]....," yet not adversely affect the coastal trade administered through Konstantinovsk (Ianovskii n.d.). "We ought to try to spread our trade with [the] interior inhabitants by means of settlement of the interior of the continent at some distance from the coast and by means of particular description of that country, to show our right to possession of all this part of America north to the very Arctic Ocean." Perhaps more to the point, Ianovskii concluded: "From this settlement, with time, it will be much more convenient to dispatch an expedition up the Copper River which, with the help of God, can reach the Arctic Ocean to the north and the Rocky Mountain Range to the northeast--something which also ought to strengthen on that side the boundary of the Rus-

sian possessions in America, and, thus, to set the limit of the Hudson['s Bay] Company, in order that it should not extend further to the west."

According to S. B. Okun (1951:114), the plan for interior exploration finally submitted by the Russian-American Company to the Minister of Finance for review was subsequently forwarded to Foreign Minister Count Charles R. Nesselrode, in charge of boundary negotiations with Great Britain, as "worthy of consideration." In part, the memorandum read (Okun 1951:114):

> It is well known that the English have already expanded their dominions to the very range of the Stony (i.e., Rocky) Mountains and will probably want to carry them forward over to this side of the mountains.... Although the Company is desirous, on its part, to expand its own colonies as far as the aforementioned range of the Rockies, which is indispensable for its stable existence, and towards which a beginning has already been made [my emphasis], and which it will no doubt achieve, unless it meets with dangerous competition; but since the Company does not have such ample resources and is not in a position to oppose the English government which is cooperating in this matter, therefore, in order to prevent the English government from coming into possession of the territory lying on this side of the mountains, the Governing Board of the Company is taking the liberty of noting that the Stony (Rocky) mountains can and should be the boundary between the two powers in that region. Mutual benefits, justice, and nature itself demand it.

The memorandum was sent to the Minister of Finance the day following the signing of the boundary treaty with Great Britain, and it was likely this unfortunate timing as much as the content which infuriated government officials and elicited a personal reprimand from the tsar: "Word has been received from His Majesty Himself that the Com-

pany be ordered to discontinue immediately the construction of the little fortresses" (my emphasis) and "should henceforth submit unquestionably to the orders and views of the government without overstepping the bounds of the merchant class" (Okun 1951:115).

Successful negotiation of the boundary treaty in 1825, coupled with the direct intervention and opposition of the government, motivated the Russian-American Company to re-evaluate its plan for "timely" exploration and occupation of the interior, but officials of the company did not abandon interest in settlement of the Copper River entirely. In correspondence written shortly after the date of the boundary treaty (RACR, CR, Vol. 4, fo. 416, 27 March 1825), the Main Office instructed Chief Manager Matvei I. Murav'ev to explore the lower 50 versts (33 miles) of the Copper River and to advise the St. Petersburg office of the feasibility of Ianovskii's recommendation that a fortified outpost be established there. To clarify the intent of these orders, the Main Office enclosed a copy of Ianovskii's special memorandum concerning the Copper River (Ianovskii n.d.) with the instructions.

Regrettably, we do not know what direct implications this unparalleled interest shown in the Copper River by company officials in St. Petersburg had for actual Russian activity in the region during the period leading up to and concluding the boundary negotiations. The curious allusion to the "little fortresses" in the tsar's reprimand, for example, invites the most speculation. In all probability, it is a reference, likely based on only fragmentary information, to

the odinochka, or "one-man post," built on the mid-course of the Copper River shortly before the boundary controversy became an important issue in St. Petersburg. This is by no means certain, however, since we have yet to learn exactly when and by whom Mednovskaia Odinochka was constructed. Khlebnikov tells us simply (Liapunova and Fedorova 1979:65): "In 1822 on the Copper River there was already an odinochka and a Russian sent there from Nuchek with goods for exchange."[8]

Furthermore, an expedition would not be sent to explore the lower Copper River in accordance with the Main Office's orders to Murav'ev. In a strongly worded reply to the Main Office's instructions, Petr Chistiakov, who succeeded Murav'ev as chief manager in October of 1825, wrote St. Petersburg (RACR, CS, Vol. 5, fos. 47-8, 30 March 1826) that abandonment of Konstantinovsk Redoubt and construction of a new settlement on the Copper River was not practical, "as it is already known that the mouth of this river is not navigable." As a glance at the map would suggest, Chistiakov argued, Kon-

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8. It was Alfred H. Brooks (1953:235, citing Wrangell), who first assumed that construction of the Copper River odinochka could be attributed to Klimovskii in 1819--a conclusion which does not seem warranted, given a careful re-reading of Wrangell (1980:81-3). Khlebnikov (Liapunova and Fedorova 1979:63-5) makes no mention of the odinochka in his summary of Klimovskii's expedition, and Semen Ianovskii, in his memorandum concerning the Copper River (Ianovskii n.d.), does not allude to any new construction in that region during his tenure as chief manager of the Russian-American Company (1818-20). Furthermore, correspondence of the Russian-American Company written between 1818 and 1830 (Communications Sent) does not resolve the question (Katherine Arndt, personal communication). I have provisionally accepted the years 1821 or 1822 as the date of construction of Mednovskaia Odinochka on the basis of Khlebnikov's statement quoted above.

stantinovsk, with its safe harbor, could conveniently serve as the company's "depot" for dealings on the Copper River, even if goods for bartering furs with the Natives had to be delivered with baidaras. "Besides, the inhabitants of Chugach Bay [Prince William Sound] are now our allies, because the Kolosh are their enemies, just as they are ours."

Chistiakov did not inform St. Petersburg, however, whether reconstruction of Konstantinovsk Redoubt, which had been authorized following Murav'ev's tour of inspection of the Kodiak District in 1823, had been completed (RACR, CS, Vol. 3, fos. 372-81, 3 October 1823). In 1825, Murav'ev wrote Kodiak to insist that Klimovskii, now manager of Konstantinovsk Redoubt, not deviate from Murav'ev's earlier order to Andrei Oskolkov to rebuild the fort near its former location (RACR, CS, Vol. 4, fos. 185-6, 12 January 1825), and it was probably shortly thereafter that the redoubt was moved a short distance across Constantine Harbor to the site of what is presently known as Nuchek (Doroshin n.d.:16).

Whatever political advantages may have accrued to the Russian-American Company from permanent settlement of the Copper River, these ambitious plans were postponed indefinitely following successful negotiation of the boundary treaty with Great Britain. By 1830, the company's interest in the region had reverted to everyday problems associated with the maintenance and expansion of the fur trade. Mednovskaia Odinochka served as the company's means of directing the fur trade of the Copper River region, and until its abandonment in 1850,

it continued to be administered from the coast through the Russian-American Company's Konstantinovsk Redoubt on Hinchinbrook Island.

Mednovskaia Odinochka and Patterns of the Copper River Fur Trade, 1820-1850. Little information has been available concerning the maintenance and year-to-year operation of the Russian-American Company's odinochka on the Copper River, and even the precise location of the station throughout the thirty-year period of its existence remains something of a mystery. Ferdinand von Wrangell says that "one and a half versts upstream from the mouth [of the Chitina River], on the bank of the Atna, is a hut with a storage chamber, built for an odinochka (i.e., as the lonely dwelling of one of the Russian company's employees and a worker, who stays here to trade with the natives)" (Wrangell 1980:82). Wrangell places the post on his map of Northwest America on the east bank of the Copper River. Ruf Serebrennikov, who in 1847 was ordered to fix the position of the odinochka exactly by lunar observation, gives the latitude of the post ("reduced from many observations") as 61° 28' 29" (Sokolov n.d.), precisely the location on contemporary U. S. Geological Survey maps of the historic Ahtna village of Taral. Presumably, between the time of Ferdinand von Wrangell's tenure as chief manager (1830-35) and Serebrennikov's expedition (1847-48), the odinochka was moved a short distance downstream below the mouth of the Chitina River.

Khlebnikov reports (Liapunova and Fedorova 1979:65) that, shortly after establishment of Mednovskaia Odinochka, Andrei Oskolkov, man-

ager of Konstantinovsk Redoubt, complained "that goods sent from Kenaiskaia krepost' [Nikolaevsk Redoubt], arriving on the Copper River, interrupted the trade of the odinochka." According to company correspondence, an interpreter, who was sent each year from Kenai to the Sukhotna (Susitna?) River, was so successful in attracting people from the interior that by 1823 trade was being diverted from Konstantinovsk and even as far away as Novo-Aleksandrovsk (Nushagak)! Chief Manager Murav'ev wrote Kenai to warn Petr Epifanov, the manager of Nikolaevsk Redoubt, that "these actions signify imprudent zeal directed toward the success of his settlement and may be the cause of a great deal of trouble...." (RACR, CS, Vol. 3, fos. 334-5, 24 June 1823). By the 1830s, we have information from Wrangell (1980:51) that Upper Ahtna, as well as Lower Ahtna, bartered their beaver pelts and other furs directly at the Copper River odinochka, indicating that by Wrangell's day the Russian-American Company had corrected the cross-purposes of its Cook Inlet and Prince William Sound traders, thereby displacing an entire series of Native middlemen in the Copper River trade.

Mednovskaia Odinochka was unique with respect to the pattern of Russian-American Company settlements and outposts, which, invariably, were situated at convenient points of navigation on the rivers and along the coast. An arduous journey, which required towing baidaras along the banks of the Copper River and portaging over the glaciers, resupplied the company's Mednovskaia Odinochka. Understandably, the trader's outfit for the season was light and easily transported, con-

sisting of a limited selection of goods, such as beads and tobacco (Wrangell 1980:50-1), that were in great demand by the trader's Ahtna clients.

For the return to the coast each spring, the Copper River trader employed local Ahtna as oarsmen for the baidara and to assist with the difficult portage at Miles and Childs glaciers, where calving ice and rapids presented many hazards for the fragile, skin-covered boats. "[T]his transfer is so onerous," Ferdinand von Wrangell wrote in 1835 (RACR, CS, Vol. 12, fo. 86, 30 April 1835), "that the natives employed in this work have already more than once risen against the baidarshchik of the odinochka, who, last year, even had to save himself from them by flight. To avert this inconvenience it was ordered that the produce be dragged along the ice in the spring on sledges; but this means is also very onerous...., and it took the inhabitants away from deer [caribou] hunting at a very crucial time, so that the people ran the danger of famine."

Wrangell proposed stationing baidaras above and below the portage to eliminate the necessity of carrying the skin boat across the glacier ice, and in justifying the added expense to the company, he assessed the value of the Copper River trade as follows (RACR, CS, Vol. 12, fo. 86, 30 April 1835):

> The annual purchase of the odinochka is very insignificant and rarely reaches 150 river beaver and half a dozen foxes; however, this odinochka is very useful in the supplying of ground squirrel parkas, kamleis and processed hides for payment of the employees at the [Konstantinovsk] redoubt. However, there is no doubt that the hunting of river beaver and

> foxes can increase if means of easing their transport to the redoubt will first be sought.... [T]hen it will be possible to think about the promulgation of hunting [among the inhabitants of the Copper River]....

Despite the facility with which the company established its outpost on the Copper River and the trader's success in attracting the trade of the Upper and Lower Ahtna, the countervailing evidence is overwhelming that the Russian-American Company was never completely successful in bringing the upriver trade totally within the sphere of Russian commercial domination and control. As early as the 1830s, goods clearly not of Russian origin or importation were appearing in the unlikeliest precincts of Russian America, and one might well imagine the astonishment of the Russian traders when such trade items as English-made rifles first appeared on the coast at Cook Inlet by way of the upper Copper River.

Much of our information about the appearance of foreign goods in the 1830s is from Ferdinand von Wrangell, and it is quite interesting that such an important part of Wrangell's ethnographic information pertaining to the inhabitants of Russian America (Wrangell 1980) should dwell on the topic of Native trade. Wrangell was very much intrigued, for example, by the wide distribution of Russian goods in America that was brought about by Chukchi trade across Bering Strait, and he was convinced, were it not for Russian-American Company control of the intervening territory, that these goods eventually would have reached as far south as Cook Inlet (Wrangell 1980:29-30). On the subject of trade between the Native people of upper Cook Inlet and the

Copper River, Wrangell elaborated upon Davydov's information written 25 years before by sketching in more detail the travel routes that connected the trade of the interior with that of the coast. As a final note on the Copper River trade, Wrangell (1970:9) observed that "guns of English manufacture, copper coins and beads not of Russian import" were occasionally reaching Cook Inlet from the interior.

Curiously enough, it was Wrangell's opinion that the "English wares," as he termed them, originated from th Chilkat Tlingit, who got them from American captains engaged in the maritime fur trade, despite Native reports claiming that these things were received "through a third hand, that is from tribes who trade with people living in forts." Wrangell (1970:9n) dismissed forts existing somewhere in the interior as "imaginary," even though he undoubtedly possessed a detailed knowledge about the extent of British penetration of the Mackenzie River valley. Aware of the ability of Native trade networks to move goods over tremendous distances, Wrangell was perhaps overly impressed with Khlebnikov's report (Khlebnikov 1976:29), which linked the Chilkat Tlingit and the Ahtna in a special trade relationship. In any event, greater credibility can be given Native opinion today, since it is generally known that, by Wrangell's time, Hudson's Bay Company outposts had begun to attract Pacific Drainage Athapaskans living west of the Mackenzie District and because, not long after Wrangell's departure from Sitka for St. Petersburg, the Russian-American Company gathered first-hand information linking the loss of the Copper River trade with an indirect British influence over the fur

trade of the interior.

Confirmation of the loss of trade to the British was from the report of Spiridon Grigor'ev, later manager of Konstantinovsk Redoubt, who explored the lower Copper River in 1843 (Sherwood 1965:106-7; Tikhmenev 1978:351-2). It is difficult to imagine what evidence established British culpability in the matter of lost trade, other than the local reports of the Ahtna and the nature of the trade goods in their possession, since Grigor'ev apparently ascended the Copper River only as far as Tazlina Lake. "The results of this expedition were disappointing," Tikhmenev (1978:351) wrote in 1863. "Very few furs were bartered, and the survey of trapping and hunting in this region promised little in the future. The expedition did not reach the Kolchani territory.... Trading with them is done even now through the natives of Kenai and Chugach bays, or when they visit company establishments in these places themselves."

That the Russian-American Company hoped to obtain detailed information at this time about the suspected loss of trade is suggested also by the expedition of Petr V. Malakhov, who set out from Kenai to explore the Susitna River at the same time that Grigor'ev left Konstantinovsk Redoubt (Tikhmenev 1978:351; Fedorova 1973:338). It seems reasonable that Malakhov would have joined forces with Grigor'ev on the upper Copper River that summer had he not unexpectedly encountered rapids on the Susitna that were impassable for the baidaras laden with trade goods. In later correspondence (RACR, CS, Vol. 27, fo. 462, 12 May 1847), Mikhail D. Teben'kov reported that Malakhov's last

camp before his return to Cook Inlet was at 62° 50' North Latitude and 148° 46' west of Greenwich, the approximate coordinates of Devil's Canyon on the upper Susitna River.

Much of the Russian-American Company's assessment of the significance of British influence in the interior fur trade might well be attributed to an exaggerated xenophobia were it not for the fact that the Hudson's Bay Company did establish an outpost, Ft. Yukon, deep within Russian American territory in 1847. Rumors about illegal English trading posts on the Yukon River were first heard during the administration of Chief Manager Mikhail D. Teben'kov (RACR, CR, Vol. 19, fos. 901-15, 31 August 1851), who instructed Ruf Serebrennikov to ascend the Copper River in 1847. We lack documentation which unambiguously establishes Serebrennikov's expedition as the Russian-American Company's immediate response to rumors about British occupation of the Yukon, but Teben'kov's written instructions to Serebrennikov (RACR, CS, Vol. 28, fos. 121-24, 3 June 1847), as well as his published remarks concerning the expedition (Teben'kov 1981:22), make it clear that the purpose of the proposed expedition was to have been something much more important than simply a detailed survey of the Copper River valley (RACR, CS, Vol. 28, fos. 121-24, 3 June 1847):

> The main goal of my orders to you is the investigation of convenient communication (by water and land) between the Copper and Kvikhpak [Yukon] rivers. For this you are to cross this space, to go from the Copper River into the Kvikhpak River and on it to reach our Mikhailovskii redoubt....
> ....[S]et out on the brig Baikal to Konstantinovskii redoubt (Nuchek), where they will give you the means and opportunity to cross to our Copper odinochka, whence your sub-

> sequent explorations should begin. At the redoubt and odinochka you will take 6 or 8 natives (about which the manager of the redoubt will be instructed by me), whom you will use for carrying your necessary equipment, of which try to have as little as possible.
>
> ....Most important, pay attention to the convenience of communication, if it should prove in consequence to be useful to supply our settlement somewhere there in the interior. Examine Plavezhnoe [Tazlina] Lake.... Investigate the richness of the fur trade of the country, not buying, however, anything from the natives.... Upon entering the Kvikhpak along the whole country to our Nulato odinochka, you may buy all products, convincing the sellers to go with you, too.
>
> For the accomplishment of this there are given to you all the necessary instruments and the journal of Spiridon Grigor'ev, from whom at a personal meeting you should learn all the details of this trip....
>
> In conclusion I ask God to grant you health on the trip. In all else I hope that next year the Commander of the ship sent to Mikhailovskii redoubt will bring you and your people back to Novo-Arkhangel'sk....

It is possible that Teben'kov also secretly anticipated Serebrennikov joining forces on the Yukon with an expedition dispatched from the Bering Sea coast, since there is earlier correspondence (RACR, CS, Vol. 28, fo. 109, 21 May 1847) instructing Ivan Zakharov, manager of Andreevskaia Odinochka, to ascend the Yukon River, meet Serebrennikov's expedition in the interior and return to the coast at Nuchek by way of the Copper River.

We now know, of course, that the explorations first outlined by Chief Manager Teben'kov in 1847 were not to be completed during the period of the Russian-American Company's administration of Alaska and that credit for one of the last major explorations of the North American continent was to accrue, not to a Native Russian American, but to a young U. S. Army lieutenant, Henry T. Allen, who explored the Cop-

per River in 1885. Serebrennikov was quite diligent in carrying out the instructions entrusted to him by Teben'kov, and it is possible to suppose that, had the Russian expedition not been suddenly cut off on the upper Copper River in 1848, Ruf Serebrennikov would have surprised the intentions of the Hudson's Bay Company on the Yukon and, in the bargain, completed a truly remarkable journey through totally unknown regions of Russian America.

Ruf Serebrennikov's Expedition and the Copper River Fur Trade, 1850-1867. The loss of Ruf Serebrennikov's expedition on the Copper River made a broad impression in the Russian American colonies in 1848. In addition to the published extract of what has come down to us as Serebrennikov's "journal" (Sokolov n.d.)[9] and various other contemporary references to the expedition (Teben'kov 1852:23; Tikhmenev 1978:352; Grewingk 1850:77n), we have Petr Doroshin's detailed description and interpretation of events leading up to and following

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9. It deserves to be called a journal, even though it had to be reconstructed from notes found among the expedition's equipment brought back to Nuchek. "I have the honor to present to the Board of Directors," wrote Teben'kov in 1849, "a short sketch of Serebrennikov's trip along the Copper River and a map, compiled by me from scraps, sketches, notes and other dirty and torn documents, which, if Serebrennikov were alive, would probably explain his journey better" (RACR, CS, Vol. 30, fos. 305-6, 15 October 1849). Similarly, Sokolov (n.d.) wrote: "Fragments of [Serebrennikov's] daily journey [sic] and astronomical observations, and tracings on his chart were preserved and subsequently surrendered by the savages. With the aid of these documents transmitted to us by Mr. Tebenkoff we give the following description of Mr. Serebrennekoff's journey and the principal results of his observations."

the killings (Doroshin n.d.), corroborated by company correspondence on the subject (RACR, CS, Vol. 29, fos. 415-6, 29 October 1848; Vol. 30, fo. 244, 11 August 1849; Vol. 30, fos. 305-6, 15 October 1849). Doroshin happened to be in Nuchek in July of 1848, preparing to sail for Kodiak on the Tungus, when the Copper River Natives, who had accompanied Serebrennikov on the final leg of the journey, arrived from Mednovskaia Odinochka with the company's trader to bring news of Serebrennikov's misfortune, most of the equipment of the expedition and, importantly, Serebrennikov's "journal." Because he was an eyewitness to the events at Nuchek and because he was later able to obtain additional information from the Copper River baidarshchik, Andreian Ponomarev, and the chief of Ozernovskii, the Ahtna village near Tazlina Lake, special weight can be given Doroshin's interpretation of the immediate and underlying causes of the disaster.

Information about Serebrennikov's movements from August 14, 1847, when he arrived at the delta of the Copper River, until June 6, 1848, after the expedition resumed explorations the following spring, is from Sokolov's account of the expedition, which has been summarized by various American authors (Allen 1887:20-1; Brooks 1953:236-7; VanStone 1955:115-6). The expedition reached Mednovskaia Odinochka on September 4, 1847, and because of the lateness of the season and on the advice of local Ahtna, whom he hoped to secure as guides, Serebrennikov decided to winter at the post.

A rather large contingent made up the expedition when it departed Copper River odinochka on May 16, 1848. In addition to Serebrennikov,

the party included Gordeev, a Russian; Pestriakov and another Creole, Gavrilov; an unnamed Eyak Indian, presumably of special status among the Russians at the redoubt; and Teinatkhel, chief of the resident Copper River Natives (cf. Shinkwin 1979:35-6 for a genealogy of Ahtna chiefs in the Taral area). Unenumerated Eyak and eight Lower Ahtna, the latter followers of Teinatkhel, accompanied the expedition (Doroshin n.d.:27-31; RACR, CS, Vol. 29, fos. 415-6, 29 October 1848). On May 24, Serebrennikov left part of the contingent at the mouth of the Tazlina River and set out to explore Tazlina Lake. After surveying the entire Tazlina lakeshore, Serebrennikov employed additional Ahtna guides on June 5 for the return to Copper River, and on June 6 the expedition reassembled at the mouth of the Tazlina River.

Dated entries among Serebrennikov's notes cease at this point, and writers discussing Serebrennikov's whereabouts after June 6 have speculated about the significance of a single, unexplained observation of latitude, recorded as 62° 48' 43". Alfred Brooks (1953:236) has suggested, assuming accuracy of the astronomical observation, that Serebrennikov reached the divide leading to the Tanana River drainage, and Robert McKennan (1959:27-8), after comparing the historical record with traditional Upper Ahtna accounts concerning a Russian camp at Batzulnetas, reached much the same conclusion. I believe that this is a reasonable interpretation, if it can be assumed that the expedition followed the traditional upper Copper River route to Mentasta Pass and given a careful evaluation of Petr Doroshin's supplemental information, which attempts to relate all available facts pertaining to Serebren-

nikov's fate after the expedition resumed its march up the Copper River in early June.

According to what Teinatkhel, the Lower Ahtna and the Eyak told the Russians at Nuchek in July of 1848, on June 27 Serebrennikov and his men were in camp at Chistlai-kaekak, the "first village" of the Goltsani, or Upper Ahtna Indians (Doroshin n.d.:28). Here, the Upper Ahtna attacked the Russians as they slept in their tents, killing Serebrennikov, Gordeev and Gavrilov. Pestriakov, wounded, escaped into the woods but was later killed making his way to Mednovskaia Odinochka (Doroshin n.d.:40-1). From a comparison of Ahtna place names and on the basis of what is known about the historical distribution of the Upper Ahtna, this village is probably Chistochina, named for the important tributary which joins the Copper River above the Gulkana and Gakona rivers.[10] Doroshin said that he could not determine whether Serebrennikov's final astronomical observation was taken at Chistlai-kaekak; the mouth of the Chistochina River is 62° 35' North Latitude.

Doroshin's descriptive reconstruction of the early morning raid on Serebrennikov's camp is preceeded by an interesting discussion of

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10. In Doroshin's spelling, kaekak is perhaps equivalent to c'ecaegge, the Central Ahtna variation of the word meaning "river mouth, confluence" (Kari and Buck 1975:77; James Kari, personal communication). In 1885, Lt. Henry Allen named this river Chitsletchina (Allen 1887: 66), and in contemporary Ahtna usage, the name for Chistochina is Tsiistl'edze'na' (Kari and Buck 1975:85). Identification of Chistlai-kaekak as the Upper Ahtna village associated with the Chistochina River is my interpretation, however; Kari believes that the events described by Doroshin took place near Sesluugge'caegge, or Suslota.

the expedition's reception at Chistlai-kaekak by the elderly chief Kitajilta and his younger brother in an effort to show in what manner Serebrennikov's breaches of etiquette as Kitajilta's guest incensed the Upper Ahtna.[11] The Russians were able to learn, on the basis of the assembled testimony of the Natives at Nuchek, that Teinatkhel, the Lower Ahtna and all but one of the Eyak (who was spared during the attack) were away from camp at the time of the Upper Ahtna raid. Thus, Doroshin implicates the Lower Ahtna chief, his followers and even the Eyak in the plot by their own testimony, since their absence implies at least tacit knowledge of the plan to dispose of Serebrennikov and his men.[12] Furthermore, it was said, according to rumor, that the motive for Teinatkhel's conspiracy was ill-feelings that had developed during the previous winter between the Lower Ahtna chief and Serebrennikov because of a woman. "I give the most credence to these last rumors," Doroshin writes, "because the behaviour of Teinatkhel and his clan and the Ugalentsi [Eyak] in all this butchery

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11. Teben'kov remarks that Serebrennikov had "learned to speak their language [but only] a little" (RACR, CS, Vol. 30, fos. 305-6, 15 October 1849), suggesting that Serebrennikov's troubles may have stemmed from an inability to communicate with the Upper Ahtna.

12. Teben'kov disagrees with Doroshin's interpretation. "The return of the unharmed guides with nothing forces one to wonder whether there was some plot on their part. But after taking into consideration again such selflessness of the toion (who was among the guides with Serebrennikov), who himself came from the Copper River to Kodiak to explain this misfortune and to present himself as a sacrifice if he was suspected of something, one is forced to doubt that the Mednovskii were participants in this murder" (RACR, CS, Vol. 29, fos. 415-16, 29 October 1848). For an Upper Ahtna version of the raid, see John and John 1973.

was altogether treacherous; jealousy can make killers even out of the civilised" (Doroshin n.d.:31).

Other than Serebrennikov's own tactlessness and the antagonisms that had grown out of a winter's forced encampment, Doroshin (n.d.: 31) suggests that a more fundamental motivation underlay the Upper Ahtna's desire to rid themselves of the Russian intruders:

> ....[T]he reason for the killing is surmised to be the unwillingness of the Goltsani [Upper Ahtna] to see the Russians go farther up the river. The Goltsani understand that the Russians, after getting acquainted with the population and the surrounding country, were going to have the opportunity to trade with the natives directly, thus causing the Goltsani to lose easily-gotten profits. Up to now they have acted as intermediaries between the Company and the natives at the head of Copper River.

In a later passage, which further develops the significance of the trade with the Upper Ahtna, Doroshin (n.d.:36-7) adds:

> Goltsani used to bring animal skins into [Mednovskaia] odinochka. English-made rifles were making their appearance among them. The rifles passed to these Goltsani who live north of Kenai Sound and reached the Kenaitsi who willingly brought [sic] them paying up to 45 roubles (paper money) according to the Company's prices on goods. These rifles, being light and with small bullets, were welcomed since there was always a shortage in lead and powder. According to tales of the Copper River people these rifles came from the English habitations in the valley of the Krikhpaka River, from Fort Yukon that lies to the north of the Copper River.

Doroshin's interpretation of the economic motivations behind the disaster presumably reflects his conversations in 1848 and 1850 with the Copper River baidarshchik, Andreian Ponomarev, an "experienced and

praiseworthy" employee of the Russian-American Company (RACR, CS, Vol. 26, fo. 390, 12 May 1846), whose assessment of the Copper River fur trade was based upon first-hand knowledge acquired during four years' service as the company's trader on the Copper River.[13]

Doroshin (n.d.:35) writes that the murder of Serebrennikov interrupted the peaceful trade relations between the Russian-American Company and the Ahtna of the lower Copper River. According to a later report (Kostlivtsov n.d.:244), Mednovskaia Odinochka was destroyed by Copper River Natives following the murders of Serebrennikov and his men, but Doroshin (n.d.:36) says that the odinochka was simply abandoned following an incident in 1850, when the Upper Ahtna came to the post and took away all of the trader's provisions. Although unharmed, the baidarshchik and his family were forced to return to Konstantinovsk Redoubt under difficult circumstances during the spring of the year.

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13. Teben'kov approved the appointment of Ponomarev as baidarshchik of Mednovskaia Odinochka in 1846 (RACR, CS, Vol. 27, fo. 86, 4 October 1846). Ponomarev replaced another company employee, Minin, who was dismissed as manager of the odinochka, Teben'kov said, "because of his close relationship to the natives. He is married to a local (Mednovskii) woman and because of this there is very much local displeasure" (RACR, CS, Vol. 27, fo. 461, 12 May 1846). In earlier correspondence (RACR, CS, Vol. 25, fo. 358, 25 October 1845), Teben'kov alludes to mistreatment of Minin's wife by the "Kol'chane" and "Far Mednovtsy," and because of this incident, local officials took action against the local chief, Tinal'tet. Teben'kov, however, demanded that the toion be reinstated to his former rank immediately.

Alphonse Pinart interviewed Ponomarev's son, Apollon, at Kodiak in 1871-72 (Pinart n.d.). Biographical information about Apollon relates that he had lived seven years on the Copper River when his father was in charge of Mednovskaia Odinochka.

Previously, Teben'kov had authorized Ponomarev, through special instructions to the Kodiak Office (RACR, CS, Vol. 30, fo. 245, 11 August 1849) to abandon the odinochka if Grigor'ev found it impossible to reinforce Mednovskaia with additional men from Konstantinovsk. Presumably, the incident of 1850 was perceived as demonstration of continuation of hostilities on the Copper River and justification for abandonment of the odinochka. According to what the chief of Ozernovskii village told Doroshin during the summer of 1850, however, the incident was explained by the severe famine sweeping the upper Copper River during the winter of 1849-50 and not by any particularly sanguine motivations. Doroshin also learned from the Tazlina Lake chief, in what must have seemed to the Russian mining engineer as an instance of divine retribution, that Kitajilta and almost all of the individuals involved in the raid on Serebrennikov's camp starved to death during this time of extreme privation.

It is reasonable to conclude that suspension of trade on the Copper River was a considerable financial loss to the Russian-American Company. If I interpret Doroshin's assessment of economic conditions at Konstantinovsk Redoubt correctly, by 1850 furs from the Copper River accounted for nearly half of the total trade of the redoubt (Doroshin n.d.:27):

> ....Annually they receive [at Konstantinovsk Redoubt from the Copper River] from sixty to a hundred lynx, four hundred to six hundred sable and up to ten foxes. For all the furs collected at the Constantinovski Redoubt the Company gives out goods to the sum of four thousand to six thousand roubles (paper money); of that sum between two

> thousand and twenty-five hundred roubles are paid out for furs trapped in the Copper River section. But all these figures refer to the year 1850. The price has since been raised. The four to six thousand roubles were paid out in glass beads, tobacco, iron kettles, paper cloth, etc., but the Chugach do not accept glass beads any longer; they go exclusively to those from the Copper River.

But there were additional reasons for maintaining friendly trade relations on the Copper River. "The unfortunate result of the expedition of Mr. G. [sic] Serebrennikov on the Copper River," wrote the St. Petersburg office (RACR, CR, Vol. 19, fos. 901-15, 31 August 1851), "should in no case prevent the colonial authorities from further endeavors to attract the trade along the shores of that river for the benefit of the Company, it being very important to establish trading posts along the Copper River in order to prevent the passage of our trade into the hands of the English."

Resumption of trade was not the unilateral desire of the Russian-American Company, and it must be considered significant that in 1858 the Lower Ahtna arrived at Konstantinovsk Redoubt to formally request trade relations be restored at Mednovskaia Odinochka. Accordingly, a clerk, escorted by the Lower Ahtna, was sent to the Copper River with goods, and he later returned safely to the redoubt (Tikhmenev 1978: 352).[14] The odinochka was not re-established at this time, however,

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14. Soviet ethnohistorian Svetlana Fedorova (1973:146), citing this incident from Tikhmenev, believes that Copper River odinochka was re-established at this time and goes on to conclude that Mednovskaia Odinochka "was the last settlement founded by the Russians in Alaska"--surely, an over-interpretation of the available information.

since as late as 1860 Chief Manager Furuhelm ordered Spiridon Grigor'-ev "without fail to revive the Mednovskaia Odinochka...." (RACR, CS, Vol. 42, fo. 129, 14 July 1860). "[S]end to the odinochka for permanent residence a trustworthy person," Furuhelm instructed Grigor'ev, "but only if you receive a certification from the Mednovskii toions on the safety of that odinochka from any attack...."

Information gathered by Sergei Kostlivtsov and Pavel Golovin, members of the distinguished committee investigating conditions in the Russian American colonies at the expiration of the company's third charter, also indicates that in 1860-61 re-establishment of Mednovskaia Odinochka was a task yet to be completed by the colonial administration (Kostlivtsov n.d.:Part II, p. 244). The committee also reported that relations between the Russian-American Company and the Ahtna were limited to once a year, when the Ahtna arrived at Konstantinovsk Redoubt to escort the baidarshchik up the Copper River to the place where the company had formerly maintained its odinochka (Kostlivtsov n.d.:Part II, p. 93).

The failure of the Russian-American Company to re-establish Mednovskaia Odinochka, and, thus, intervene directly in the course of the fur trade with the Ahtna, had important consequences for patterns of the Copper River fur trade after 1850. In the early 1860s, references to Ahtna trade at Knik Arm in upper Cook Inlet begin to appear in the literature, and Tikhmenev (1978:433) reports that at about this time a company employee was sent annually from Nikolaevsk Redoubt to several places on the nearby mainland, where trade fairs were held for the

benefit of Natives from the interior. Zakhar Chichinov, a long-time employee of the Russian-American Company whom Ivan Petroff interviewed at Kodiak in 1878, relates that in 1863 he had taken charge of four baidaras with goods at Nikolaevsk Redoubt with the intent of passing the winter trading in the villages of Knik Arm (Chichinov n.d.:48-52). By late spring, Chichinov and his men anxiously awaited the arrival of Native trading parties from the interior, and although these people are referred to simply as "Kolchane," it is clear from Chichinov's context that the interior Natives were coming to the Knik villages from the Copper River.

Thus, important new developments in the patterns of the Copper River fur trade emerged during the final years of the Russian-American Company's tenure in America. It is particularly interesting that Petr Tikhmenev (1978:352), among few specific remarks concerning the future conduct of the Russian-American Company's business in America, recommended in 1863 that "Knyk River should become the center of the company's fur trade" for the Copper River region and that an experienced manager be sent there for the winter each year. As we shall see in the discussion of the Copper River fur trade during the early American period, this advice was followed explicitly and to advantage by the American firm which was soon to inherit the assets and accumulated business experience of the Russian-American Company.

THE ALASKA COMMERCIAL COMPANY AND THE COPPER RIVER FUR TRADE, 1867-1900

In the months immediately following the formal transfer of Alaska to the United States in 1867, the San Francisco firm of Hutchinson, Kohl and Company purchased virtually all of the assets of the Russian-American Company and emerged as the commercial heir to a far-flung fur trading enterprise. In 1868, Hutchinson, Kohl incorporated under the laws of California as the Alaska Commercial Company, and in 1870, the firm received exclusive rights to manage the fur seal industry of the Pribilof Islands. Preoccupied with obtaining control of the Pribilofs and establishing Kodiak as a regional administrative center, the Alaska Commercial Company does not appear to have turned its attention to affairs within the former Kodiak District of the Russian-American Company much before 1871, but by 1872, the company had occupied the old Russian stations and outposts in Cook Inlet and Prince William Sound and settled into patterns that would distinguish a long and successful career as the pre-eminent fur trading firm in American Alaska (Sloss and Pierce 1971; Sloss 1977).

Until 1911, when W. J. Erskine purchased the stations of the Kodiak District (Kitchener 1954:140), the Alaska Commercial Company epitomized stability, continuity and conservatism in the commercial affairs of southern Alaska. Competitors both large and small, however, emerged from time to time to challenge the company's domination of the two regions of coastal Alaska--upper Cook Inlet and Prince William Sound--that were important centers of the Copper River fur

trade during the late nineteenth century. Although we know very little about these independent traders and smaller firms, none presented a serious enough threat to force direct intervention in the fur trade of the Copper River at any time between 1875 and 1899, and despite initiation of an era of commercial competition, American enterprise was content to await the arrival of the Ahtna on the coast each spring, when furs from the Copper River were disposed of at the trading stations of upper Cook Inlet and Prince William Sound.

The commercial accounts, correspondence, financial statements, journals and other documents of the Alaska Commercial Company preserve a continuous record of developments in the fur trade of upper Cook Inlet and Prince William Sound up to 1900. It is an uneven record with regard to details that pertain to Ahtna participation in that trade, however, and not until 1885, when Lt. Henry T. Allen explored the Copper River, do we learn anything about the impact of American conduct of the fur trade upon the Native inhabitants of the Copper River. American pursuit of the Copper River fur trade was from a distance, and the patterns established in development of the trade with the Ahtna after 1870 characterize the indirect nature of the contact situation throughout the late nineteenth century.

Because Allen's expedition is such an important event in Ahtna history, it will serve as a convenient marker for organizing discussion of the Copper River fur trade during the early American period. First, I will review development of Ahtna trade at the Alaska Commercial Company's stations in Prince William Sound and Knik Arm before

1885 and, then, present a critical assessment of Ahtna participation in the fur trade between 1885 and 1890, the best documented interlude of the early American era. The stampede which brought thousands of miners to the Copper River valley in 1898 had an immediate impact upon the fur trade of the Copper River, but the decade of the 1890s already had witnessed a disastrous decline in trade reaching the Alaska Commercial Company's stations in upper Cook Inlet and Prince William Sound. In a final discussion, I explore the implications of the developments--the stampede of '98 and the collapse of the fur trade at the end of the nineteenth century--that conclude consideration of Ahtna participation in the fur trade during the early American era.

Patterns of the Copper River Fur Trade, 1870-1885. During the summer of 1871, probably not long after the Alaska Commercial Company occupied Nuchek Station and initiated business there, Oliver Smith, the station agent, organized a "Copper River expedition" to bring furs down from the Copper River to the company's station on Hinchinbrook Island. One participant, Nicolai Lukin, is mentioned, probably because he was hired in the special capacity of interpreter, but details about other members of the expedition, their ultimate destination and the success or failure of their trading venture are unknown. The only record of the expedition consists of cryptic ledger entries in accounts summarizing special expenses at Nuchek Station in 1871 (Alaska Commercial Company Records Collection [ACCRC]:Box 131, Folder 1220). Similarly, in 1873 the trader recorded that the cost to the company

of provisioning and manning a Copper River expedition in that year was $486.13, excluding the cost of "stringing beads for Copper River," itemized separately at $21.30. Whether the "Copper River expeditions" were annual events scheduled by the Alaska Commercial Company agent is not clear from the incomplete commercial records of Nuchek Station dating from the 1870s, but I suspect that they simply represented a continuation of the Russian practice of sending a trader up the Copper River each year to meet the Ahtna near the former site of Mednovskaia Odinochka at Taral.[15]

By the mid-1870s, we have the first indication among the records of the Alaska Commercial Company that Copper River Indians had come to Nuchek to trade, and there is little reason not to believe that the Ahtna were already regular visitors at American trading stations on the coast by the middle of the decade. In 1875, for example, the Alaska Commercial Company trader recorded in the Nuchek Station expense accounts the costs for paying an interpreter and providing provisions for the "Copper River tribe," who were visitors at the station in August (ACCRC:Box 131, Folder 1216), and the following summer the agent wrote Kodiak that he was momentarily expecting the Copper River Indians at the station to trade (ACCRC:Box 117, Folder 1057; Allen

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15. Dr. J. B. Ballou, who later became the Alaska Commercial Company agent at Knik, in 1887 wrote (ACCRC:Box 24, Folder 305) that he had once gone up the Copper River with goods and traded with the Copper River Indians, but I have not found additional information concerning the date of Dr. Ballou's travels on the Copper River or whether he was employed by the Alaska Commercial Company at the time.

B. Francis to the general agent of the Alaska Commercial Company, 23 July 1876). By 1875, there would have been little impetus for the Alaska Commercial Company to intervene directly in the fur trade of the Copper River, if, on their own initiative, the Ahtna were coming downriver to dispose of their furs at the company station on the coast.

We know very little about the Alaska Commerical Company's early competitors, who began stationing traders in the Chugach villages as early as 1872 (ACCRC:Box 132, Folder 1230; Agent, Alaska Commercial Company, Kodiak, to Oliver Smith, 5 October 1872), and even less about the implications of this competition for trade relations with the Copper River Indians. By the end of the decade, one firm, the Western Fur and Trading Company, had emerged as a serious contender for the regional fur trade, and according to Ivan Petroff, who visited Nuchek for an extended period in 1881 (Petroff 1882:567), it was essentially the trade in sea otters which sustained two competing companies in Prince William Sound (Petrof[f] 1900:87). Vigorous competition between the two companies meant high prices for furs, low prices for goods offered for sale and easy extension of credit. After the demise of the Western Fur and Trading Company in 1883, the Alaska Commercial Company made a serious effort to collect debts outstanding in the Chugach villages (Abercrombie 1900a:400; Allen 1887: 34), but whether many Ahtna had become indebted to the trader during the time of easy credit is not recorded.

The Western Fur and Trading Company no doubt had grown powerful

enough to challenge Alaska Commercial Company control of trade eminating from the Copper River, and it is within the context of the competitive atmosphere of the early 1880s that we should probably view the Alaska Commercial Company's decision in 1882 to send C. George Holt up the Copper River to determine the feasibility of establishing a trading station at Taral (Abercrombie 1900a:403; Kitchener 1954: 155). Holt ascended the Copper River in the company of Ahtna, who were returning from a spring trading expedition to Nuchek, and after spending an unpleasant summer immobilized by injury in the vicinity of the Ahtna village, he returned in September to report negatively on the company's proposal (Abercrombie 1900a:403; Allen 1887:23; Kitchener 1954:155). We know few details of Holt's experiences during his brief residency at Taral, but three years later, when Lt. Allen was at Nuchek, Holt vociferously recited various unsavory incidents to illustrate his opinions about the character of the Copper River Indians. The ill-feelings were mutual; Allen learned later in 1885 that the Ahtna "seemed to cherish a violent dislike" of the Alaska Commercial Company trader (Allen 1887:23n). In any event, the matter of a trading station on the Copper River was not considered further, and I suspect that flagging interest in this enterprise was conditioned more by the elimination of competition in Prince William Sound in 1883 than by difficult relations with the Lower Ahtna at Taral, as has been suggested previously (Kitchener 1954:156).

The records of the Alaska Commercial Company indicate that for a brief interval between 1881 and 1883 the company stationed a trader

at Cape Martin, just east of the Copper River delta, and it seems reasonable to interpret this development as an additional response by the company to competition. Cape Martin was accessible to Ahtna arriving on the delta of the Copper River and was actually more convenient than Nuchek Station, since travel to Hinchinbrook Island required a seaworthy baidara, which was not always available to Natives arriving on the coast from the interior. The Alaska Commercial Company also owned a store building at Odiak near present-day Cordova, mentioned in the earliest inventories of buildings in the Kodiak District (1871), but it is not certain that any trading was transacted here until the 1890s, when the company began catering to fishermen and workers in the canneries of Orca Inlet.

Captain William R. Abercrombie, who briefly visited Port Valdez after an unsuccessful attempt to ascend the Copper River in 1884, learned from a former employee of the Russian-American Company that "some years ago, probably twenty or thirty," the "Upper Copper River Indians" used the portage over Valdez Glacier to trade at the Chugach village of Tatitlek (Abercrombie 1900a:390-1). The Ahtna abandoned the portage in favor of the lower Copper River, Abercrombie relates, after some disagreement led to a confrontation with the local Chugach, and probably from the beginning of relations with American traders, Ahtna trading expeditions to Prince William Sound arrived on the coast by way of the lower Copper River. By the time of Lt. Allen's expedition in 1885, the Alaska Commercial Company had eliminated the Western Fur and Trading Company as a major competitor in the fur trade

of Prince William Sound and closed its own station at Cape Martin. Nuchek once again became the exclusive center of the regional fur trade, and Ahtna arriving on the coast by way of the Copper River traveled to Hinchinbrook Island to sell their furs to the Alaska Commercial Company agent at Nuchek Station (Abercrombie 1900a:404; Allen 1887:33; Seton-Karr 1887:201; ACCRC:Box 132, Folder 1231).

If American pursuit of the Copper River fur trade seemed to falter and retreat somewhat from patterns established in Prince William Sound during late Russian times, trade with the Ahtna in upper Cook Inlet proceeded with more vigor. The focus of the fur trade in upper Cook Inlet was Knik, and by the late 1880s there is compelling evidence that Knik Station had become as important as Nuchek in attracting the fur trade from the Copper River. Since the significance of Knik to Ahtna participants in the fur trade has not been widely recognized in the literature, it is important to provide some details concerning the history of the Alaska Commercial Company station as a center of the regional fur trade prior to 1885.

The earliest reference to Knik Station in the records of the Alaska Commercial Company is in the 1871 inventory of buildings in the Kodiak District (ACCRC:Box 40, Folder 366), and it is probable that a company agent arrived in Knik Arm to begin trading as early as 1871, or at about the same time that the company began business at Nuchek Station in Prince William Sound. Knik Station operated seasonally and was subsidiary to the Alaska Commercial Company agent at Kenai, a pattern which closely approximates the Russian practice des-

cribed by Zakhar Chichinov (n.d.:48-52) in 1863. In addition to a dwelling for the agent and two store buildings at Knik, the 1871 inventory indicates that the Alaska Commercial Company owned a dwelling and store building at Goose Bay on the winter trail to Tyonek and a building at "Netua," presumably a nearby village of the Knik, or Upper Inlet Tanaina, Indians. Since it is unlikely that the Alaska Commercial Company could have constructed these buildings by such an early date, the inventory likely documents facilities maintained by the Russian-American Company in Knik Arm at the time of the transfer of Alaska to the United States.

Although Ahtna were probably among the first visitors at the Alaska Commercial Company station at Knik, the earliest record of their arrival at the post is from the 1882-83 journal of the Tyonek agent, Peter Chichinoff, who in September of 1882 traveled to Knik to act as temporary agent at the station (ACCRC:Box 151, Folder 1556). Chichinoff noted in his journal that Copper River Indians began arriving at Knik Station in mid-December and that they were periodic visitors until he closed the store and returned to Tyonek on the last day of February 1883. Other journals written by Chichinoff indicate that, whenever Knik Station was closed, the Ahtna would travel as far as Tyonek to conduct their business. The Western Fur and Trading Company also stationed a trader at Knik before 1883, but I have been able to learn little about the Alaska Commercial Company's competitors in upper Cook Inlet prior to 1885.

At the time of Lt. Henry Allen's expedition in 1885, then, Knik

Station in upper Cook Inlet and Nuchek Station in Prince William Sound were the principal focal points of the fur trade reaching American trade centers on the coast from the Copper River. Although Allen gathered information concerning the significance of Nuchek in the fur trade of the lower Copper River, he seemed only vaguely aware of the importance of Knik as a trade center for those Ahtna living near Tazlina Lake and on the middle Copper River. It is important, therefore, to review Allen's observations concerning the Copper River fur trade in the context of the records of the Alaska Commercial Company and other contemporary documentation, since they suggest that Ahtna participation in the fur trade at the time of the 1885 expedition was much more pervasive than might be surmised on the basis of Allen's report alone.

Lt. Henry Allen's Expedition and the Copper River Fur Trade, 1885-1890. Allen's account of his reconnaissance in Alaska was first published in 1887 and describes his explorations of the Copper, Tanana, Koyukuk and lower Yukon rivers in 1885 (Allen 1887). Our interest in Allen's report begins with the arrival of the personnel of the expedition at Nuchek in mid-March and includes the narrative of the ascent of the Copper River, which occupied the expedition until June 5 (Allen 1887:31-70). Additional commentary about Ahtna participation in the fur trade is included in a later section of the report, which summarizes Allen's observations about the Native inhabitants of the Copper River (Allen 1887:127-36).

When Allen arrived in Prince William Sound on March 19, he learned from the Alaska Commercial Company agent, C. George Holt, that a party of Copper River Indians was in one of the Eyak villages on the mainland and was expected momentarily at Nuchek Station to trade. Since this seemed to suggest that the ice had not yet gone out of the Copper River, Allen set out immediately for Alaganik to prepare for the difficult ascent of the lower Copper River. The expedition intercepted the Indians bringing the Copper River furs to Nuchek near the mouth of the Eyak River, and by promising to purchase the lot of furs for $40 (Nuchek prices), it was Allen's good fortune to convince "Skilly," captain of the Copper River trading party, to join the expedition until it reached Taral. Skilly's trading party was a small expedition which apparently had been organized at the insistence of John Bremner, a prospector who had spent the previous winter at Taral, and the main trading expedition from the Copper River was not expected on the delta until later in the spring.

The ascent of the lower Copper River required two weeks, and after many hardships, the expedition reached Taral on April 10. Allen was greeted at the Ahtna village by John Bremner, who later joined the expedition, but Nicolai, the local Ahtna chief about whom Allen had already heard a great deal, was away hunting on the headwaters of the nearby Chitina River. We learn that, in addition to being the "proprietor of Taral" and "tyone of Chittyna," Nicolai was the principal trader among the Natives. Nicolai had only recently become chief, and he shared authority and leadership among the Lower Ahtna

with Conaquanta, chief on the middle Copper River above Taral. Nicolai and Conaquanta replaced Teinatkhel (=Bacile, or Mesalla), chief at the time of Serebrennikov's expedition, who was deposed in 1884 because of the infirmities of his advanced age (Shinkwin 1979:35-6).

It is interesting that the role of middleman should be Nicolai's, since, traditionally, wealth and the means of procuring it were closely linked in Ahtna chieftainship (Shinkwin 1979:37). We cannot be certain, however, how far Nicolai's influence as middleman extended among the local Natives. Allen tells us that Nicolai left beads, caps and powder at his house on the Nizina in exchange for furs that the "Colcharnies" (Upper Tanana?--cf. McKennan 1959:16-7) would bring during his absence, and George Holt told Abercrombie (1900a:406) that "Colcharnies" had come down to trade during his visit at Taral in 1882. Some of these Indians no doubt were Upper Ahtna, since Allen relates that a large camp of Indians, whom he passed above the Chistochina River in late May, intended to set out downriver to go into summer fish camp at Taral, and I suspect that their early departure presented a timely opportunity for trade as well. According to John Bremner, who made a brief excursion up the Copper River from Taral during November of 1884, the Lower Ahtna got marten and foxes in trade from the upriver Natives. They also received powder, which came from the Yukon, but the quantity was very limited, and Bremner considered the Lower Ahtna to be largely dependent upon the traders at Chilkat and Nuchek for their ammunition (Seton-Karr 1887:212).

After exploring the Chitina River and returning with Nicolai to

Taral, Allen resumed the march up the Copper River in early May. The expedition soon reached Conaquanta's village, and much to his surprise, Allen found tea and sugar, flour, and "fancy" cups and saucers in the possession of the villagers. The flour, Allen learned, had come from "Tasnai" on upper Cook Inlet, and he now realized that the trail which followed the Tazlina River, about which he had already heard a great deal from the Ahtna, actually led to Knik Arm and not the mouth of the Tanana River, as he had previously supposed. It is significant that Conaquanta's followers should have gone to Knik, rather than Nuchek, to obtain their flour, and we might imagine that, as the rival chief, Conaquanta was Nicolai's rival as middleman on the middle Copper River as well. Unlike the Russian explorers who had preceded him, Allen decided not to ascend the Tazlina River, which was crossed a few days above Conaquanta's village.

On June 2, Allen reached Batzulneta's village, and he found that a number of Indians from the Tanana had gone into summer fish camp with the Upper Ahtna chief to await the arrival of the summer's run of salmon. The presence of Indians from the Tanana on the headwaters of the Copper River Allen considered quite significant, since it helped settle the question of whether Copper River Indians ever visited the Yukon. Allen later learned that Copper River Indians had visited Fort Reliance in 1883, but he concluded that these visits were infrequent and that communication between the upper Copper River and the Yukon traders was of an indirect nature with the Indians of the Tanana acting as intermediaries. On June 5, the expedition

reached Suslota Pass, and at this point Allen ends the narrative of the Copper River to begin his description of the expedition's travels on the Tanana River.

It is interesting that, from the perspective of his travels across Alaska, Allen should consider the Ahtna the most impoverished in terms of day-to-day luxury goods that elsewhere were commonplace among the Indians of the interior. Only the wealthiest Ahtna chiefs, Allen noted, possessed a modicum of imported cooking utensils, and when he arrived in the upper Tanana valley in early June, he was immediately impressed by the appearance of the local residents, particularly by their clothing, which presented a vivid contrast to the more traditional dress of the inhabitants of the Copper River. The Upper Tanana Indians, Allen concluded, had "more easy communication with a trading station" than did the Ahtna (Allen 1887:75).

Nevertheless, Allen found various items of American importation universally distributed along the Copper River. Nearly everyone possessed small axes, or hatchets, and Allen frequently saw small-bore, double-barrel shotguns, although he noted that bows and arrows were still much in use by the Natives. Glass beads decorated the sheaths and scabbards of rich and poor alike, and men and women of all social classes cherished larger bead types as items of personal adornment. Beads and ammunition, Allen suggests, had become the de facto media of exchange of the region.

Allen had no opportunity to observe the Ahtna procure the furs that were sold to the trader to obtain these goods, since the hunting

and trapping season was over when he reached Taral in mid-April. He did learn something about Ahtna trade relations with the Alaska Commercial Company agent at Nuchek, as we have seen, but although he was aware that Ahtna had access to traders in upper Cook Inlet, his decision not to explore the Tazlina River precluded the opportunity of visiting Ahtna living in the vicinity of Tazlina Lake and learning the full significance of the Tazlina Lake portage in the fur trade of the middle Copper River. Fortunately, the business accounts of the Alaska Commercial Company provide an extensive record of the conduct of the fur trade in upper Cook Inlet from 1886 to 1891, and the journals written by the Knik traders in particular are important documentation of Ahtna participation in that trade during the period immediately following Allen's reconnaissance in 1885.

The trader in charge of Knik Station during the winter of 1886-87 was Dr. J. B. Ballou, and he replaced as agent C. George Holt, who was murdered at the station on December 18, 1885. No official investigation of Holt's murder was ever undertaken, but it was common knowledge in upper Cook Inlet at the time of Dr. Ballou's arrival in September of 1886 that the alleged murderer was a Copper River man, probably from the village near Tazlina Lake.[16] Holt's murder clearly

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16. All references to Holt's murder that have come down to us from nineteenth century sources are consistent in identifying a Copper River Indian as the murderer (ACCRC:Box 151, Folder 1558; The Alaskan 1886a; 1886b; 1886c; Allen 1887:23n; Seton-Karr 1887:131). Knik Indians traveled to Tyonek shortly after the murder to report the incident, and the entry in the Alaska Commercial Company agent's journal under the date of December 26, 1885 provides the following details

preoccupied Ballou from the moment of his arrival at Knik and shaped many of the trader's attitudes toward and subsequent dealings with the Copper River Indians. "Not knowing that myself, as well as my predecessor Holt, might get killed here," Ballou wrote in March of 1887 (ACCRC:Box 24, Folder 305), "I think that everyday occurrences and my impressions of things as I see them at the time have a right to be recorded. Then, in case of [an] accident happening, it would help my superiors...to form an exact idea how things stood and who was in fault." Among the everyday occurrences that Ballou was particularly careful to record were those concerning the comings and goings of Copper River Indians at the station throughout the winter. I will return to Ballou's remarkable journal momentarily for details that concern Ahtna dealings at the station.

In the fall of 1887, Peter George Shell succeeded Dr. Ballou as

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(ACCRC:Box 151, Folder 1558):

> Dec. 26[, 1885]
> Come Natives from Kenick, tell[ing of] one Copper River Native killing Agent of Kenick, Mr. Holt, [the] morning of 18th December: [The] 15th December come two Copper Natives [to sell their] fur. [O]ne Native start[ed] to succeed. Agent to throw out him from Store. [A]fter that, three day hime quiet. [On] 18th December Morning, Agent came out from house, that moment Native killing him from Double Gun. Native shot hime the back and bullet to trace out through to breast. Natives to watch him from Woods. Kenick, Shuchitna and Tyoonock natives is fear that Copper Natives go killing all natives.

Presumably, Alaska Commercial Company officials from Kodiak investigated the murder later in the spring of 1886, but I have not located an account of the company's investigation.

the Knik agent, and he remained in charge of the station until his retirement from company service in the spring of 1891. We probably will never know all of the details surrounding the difficulties between the Knik traders and the Copper River Indians during Shell's tenure as agent, but in October of 1890, Shell wrote a curious letter, addressed to the "Gentlemen Miners" of Turnagain Arm, offering a cabin and free provisions to anyone willing to spend the winter with him at Knik. "My reasons....for wanting another man to live here this winter," Shell explained (ACCRC:Box 117, Folder 1043), "are on account of the Copper River Indians [who are] inclined to be a little troublesome." Actually, Shell's troubles seemed to have been mainly with the individual referred to in his journal of 1890-91 as the "Indian that killed Mr. Holt" (ACCRC:Box 24, Folder 306), and I suspect that it was this man who was the unidentified Copper River Indian hanged by the Knik traders at the station during the spring of 1891.

The hanging, which is referred to in a complaint written to the authorities by the parishioners of Kenai around 1895 (Townsend 1974: 15), no doubt involved Shell, as well as the entire white population of Knik: Charles Miller, a miner from Turnagain Arm who responded to Shell's letter of October, A. Creason, and Alec K. Ryan, the competing trader at Knik during the spring. Shell makes no reference to the hanging in his journal, but in the station accounts he recorded the expense for "dressing a dead Copper River Indian" on March 4 (ACCRC: Box 24, Folder 302), probably the date of the hanging. The subsequent actions of Creason and Ryan at Knik and Kenai during the early

1890s were the actual subject of the complaint registered by the people of Kenai (Townsend 1974:15-6). Shell had planned to retire to a fox farm in southern Cook Inlet, but he was accidentally killed on July 4, 1891 when a windlass broke aboard the company schooner taking him to Kenai.

Limited but important data pertaining to Ahtna trade at Knik indicate that the Copper River trade was a major part of the annual business at the station during Dr. Ballou's and George Shell's tenures as agent. During the winter of 1886-87, for example, Dr. Ballou recorded in his journal that Copper River Indians were visitors at Knik on five important occasions between October 21, 1886 and April 20, 1887, at which times the trader bought from them a total of $1541.35 worth of furs, prepared skins, sinew and "curios." In addition to noting the number of participants in each of these trading expeditions, Ballou lists the quantity of each type of fur brought to the station and how much he paid the Ahtna for them. It is an important, if unique, record (Table 1).

The total value of the Copper River furs sold at Knik during the winter of 1886-87, which would exclude any furs sold by the Ahtna to Bowen, the competing trader at Knik that season, represents 69 percent of the total value of all furs brought into the Alaska Commercial Company station throughout the accounting year. This would include the trade of the local Knik and Susitna Indians as well as that from the Copper River. Although George Shell did not leave as detailed an accounting of Ahtna dealings at the station as did Ballou, I have

Table 1. Ahtna at Knik Station, 1886-87. Excerpts from the journal of Dr. J. B. Ballou, Agent (ACCRC:Box 24, Folder 305).

Oct. 21, 1886. Two Copper River natives came in today. Sold me all their furs:

2	dear skins	$2.00
1	Bear, black	4.00
2	" "	6.00
5	wolfs	5.00
6	"	3.00
	sinew	.10
		$21.10

Dec. 14, 1886. 7PM. Eight Copper River natives just in. 11 PM. Worked all night buying furs.

Dec. 15, 1886. Fifteen Copper River Indians here this morning. Big trade on hand. Have no time to count furs. Immense trade going on and much talking--

Dec. 16, 1886.

15	Blk foxes	$180.00	17	X foxes	$25.50
29	dear skins	29.00	7	red "	7.00
2	red bear	4.00	18	Martins	27.00
1	blk "	1.00	37	lynx	37.00
3	minks	1.50	2	land otter	5.00
2	M. rats	.10	1	wolf	1.00
12	Beavers	19.20	1	wolverine	1.00
4	"	4.00		sinew	.30
					$342.60

Mar. 17, 1887. 8 PM. Eight Copper River Indians just in. Hurrah! Have all the furs in the store. 10 PM. Two more Copper Rivers in. Have also their fur-- One Copper River chief here also.

Mar. 18, 1887. Hard fight last night for fur. Copper River Indians are hard to deal with when there is opposition store. They are independent.

49	lynx	49.00	23	X foxes	34.50
2	minks	1.00	5	black "	65.00
18	martens	27.00	4	musk rats	.20
4	Beavers	6.40	4	wolverine	4.00
1	wolf	1.00	19	dear skins	19.00
2	foxes	10.00	1	land otter	1.00
17	red "	17.00		sinew	2.00
					$237.10

Table 1. Ahtna at Knik Station, 1886-87--Continued.

Mar. 21, 1887. Copper Rivers all here yet; 15 men. Three Copper River Indian women came in also last night. They are afraid that their men will get in trouble, so they followed them.

105	lynx	$105.00	7	beavers	$11.20
27	Black foxes	405.00	1	dressed skin	.60
31	X "	46.50	4	musk rats	.20
27	Red "	27.00	2	parkers/curios	7.00
1	Creole "	5.00	11	deer skins	11.00
30	martins	45.00	2	black bears	6.00
6	wolverine	6.00	2	red "	5.00
6	wolves	6.00		sinew	.25
5	parkers	15.00		curios: knives	2.00
2	minks	1.00			$704.75

Apr. 18, 1887. 6 PM. Eight Copper River Indians just in. In all, eleven Copper River Indians and three squaws stopping at the "Hotel de Bums" tonight.

Apr. 20, 1887.

20	dear skins	$20.00	4	lynx	$4.00
1	Red fox	2.00	1	beaver	6.40
17	X "	25.50	1	"	.50
7	Red "	7.00	4	dressed skins	2.40
7	Silver gray fox	105.00	1	mink	.50
3	Creoles	15.00	4	parkers	12.00
21	martin	31.50	1	lot fur	3.00
1	wolverine	1.00		sinew	1.00
					$236.80

been able to estimate from his accounts that the Ahtna sold $2612 worth of furs, or 67 percent of the year's total, during the winter of 1889-90, and $1500 worth of furs, or 59 percent of the year's take, during the winter of 1890-91.[17]

In Prince William Sound, some of the best documentation of Ahtna trading expeditions to Nuchek Station also pertains to the period immediately following Allen's expedition and provides some interesting comparisons with the record of Ahtna activities in upper Cook Inlet during the same time period. Abercrombie (1900a:404) states that a party of ten Copper River Indians sold $350 worth of furs to the trader at the Nuchek store in August of 1884. In 1885, the year of Allen's expedition, the main trading party from the Copper River arrived at Nuchek the last week of May (Seton-Karr 1887:201). In 1886, it consisted of 18 men, who arrived at Nuchek in two baidaras on June 10 (ACCRC:Box 132, Folder 1231), and according to Seton-Karr (1887: 201), the Indians "sold to the company nine hundred dollars worth of furs, exchanging the money immediately after for goods, which they

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17. These estimates are derived from a comparison of the station's fur books and expense accounts (ACCRC:Box 24, Folders 302 and 306). The expense accounts record gifts to Natives (usually identified by "tribe") that provide a date for the visits of Copper River Indians at the station, and the fur books contain a record of the furs purchased by the agent on a daily basis. Through a comparison of dated entries in the fur and expense accounts, it is possible to compile an estimate of furs sold by the Ahtna at Knik Station throughout the year. The arrival of Knik or Susitna Indians at the station at the same time as the Ahtna frustrates this method at times, however, and, thus, the totals should be considered approximate. No data are available for the winters of 1887-88 and 1888-89.

bought in bulk." In 1887, a group of 12 Copper River Indians arrived at the station from Odiak on March 12, and on March 13, the trader purchased from them $607 worth of furs, which represented virtually all of the peltry brought into the station during the month of March (ACCRC:Box 132, Folder 1231). Another group of Ahtna arrived at Nuchek on June 3, 1887, the only other reference to Copper River Indians in the station journal of 1886-87, but the agent gives us no details concerning their trading activities.

There are problems in isolating trade from the Copper River among the fur accounts and other records of Nuchek Station, and the only annual figure available for the value of the Copper River trade reaching Prince William Sound during the late 1880s is for the accounting year of 1887 (1 April 1886 to 31 March 1887). In that year, the Ahtna sold at least $1507 worth of furs to the Nuchek trader, or approximately 56 percent of the total value of all furs (except sea mammals) brought into the station that season. Although this dollar amount ($1507) is slightly less than the value of the furs sold by the Ahtna at Knik Station during the same accounting period ($1541.35), the record is too fragmentary to gauge the relative importance of the two stations in the Copper River fur trade over a more extended period during the late 1880s.

Despite these data limitations, the documentary record clearly indicates that trade with the Ahtna was an important source of furs reaching the Alaska Commercial Company's stations in upper Cook Inlet and Prince William Sound at about the time of Allen's reconnaissance

in 1885. Furs from the Copper River were the major source of the company's annual trade at Knik Station between 1886 and 1891, and they likely were a significant part of the total value of all land-based furs reaching Nuchek Station in Prince William Sound during the same time period. Although conclusions about the actual number of participants in all facets of the trade must remain impressionistic, the documentary and historical record indicates that, by the late 1880s, substantial numbers of Ahtna traveled to upper Cook Inlet and Prince William Sound annually to dispose of the season's fur catch at American trading stations on the coast.

Moreover, the record of Ahtna trade relations at the stations of the Alaska Commercial Company provide actual measures of the wealth being generated in the Native economy by 1887 that seemingly contradict Allen's impression of the relative poverty he observed along the Copper River in 1885. We presently lack means whereby the extent of Ahtna participation in a fur trade economy can be measured against that of neighboring Indian groups of the interior, but I suspect that Allen's ideas about what constituted material wealth were concepts not necessarily shared by the Ahtna. Although we require a better understanding of nineteenth century Ahtna ideas concerning wealth, the purchasing power of the fur trade dollar at American trading posts during the 1880s and the kinds of goods that were favored on the Copper River throughout the early American period, the available evidence clearly suggests that by 1885 the Ahtna were much more involved in a fur trade economy than one might suspect from a reading of Allen alone. Actual-

ly, Allen's ascent of the Copper River occurred at the time that Ahtna participation in the fur trade was nearing its apogee during the early American period, which will become apparent in the following assessment of the Copper River fur trade at the close of the nineteenth century.

The End of an Era: The Copper River Fur Trade during the Final Decade of the Nineteenth Century. Although the records of Knik and Nuchek stations provide important measures of the Copper River fur trade reaching the Alaska Commerical Company's trading stations during the late 1880s, I have not found comparable estimates of the value of that trade for any other interval during the early American era. There exists, however, a nearly complete record of the total annual fur take at these two stations in Alaska Commercial Company accounts dating from the thirty-year interval 1872 to 1901, which I have compiled and present in summary form in Figures 1 and 2. Although it must be emphasized that these data pertain to the fur business of only one firm--the Alaska Commercial Company--they reflect general developments in the regional fur trade from which it is possible, I believe, to make certain inferences about trade originating from the Copper River specifically throughout the late nineteenth century.

Figures 1 and 2 summarize the trade in furs, represented both as total dollar values and total quantities of furs sold, at the Alaska Commercial Company's Knik and Prince William Sound stations, respectively. The Prince William Sound graph summarizes fur production

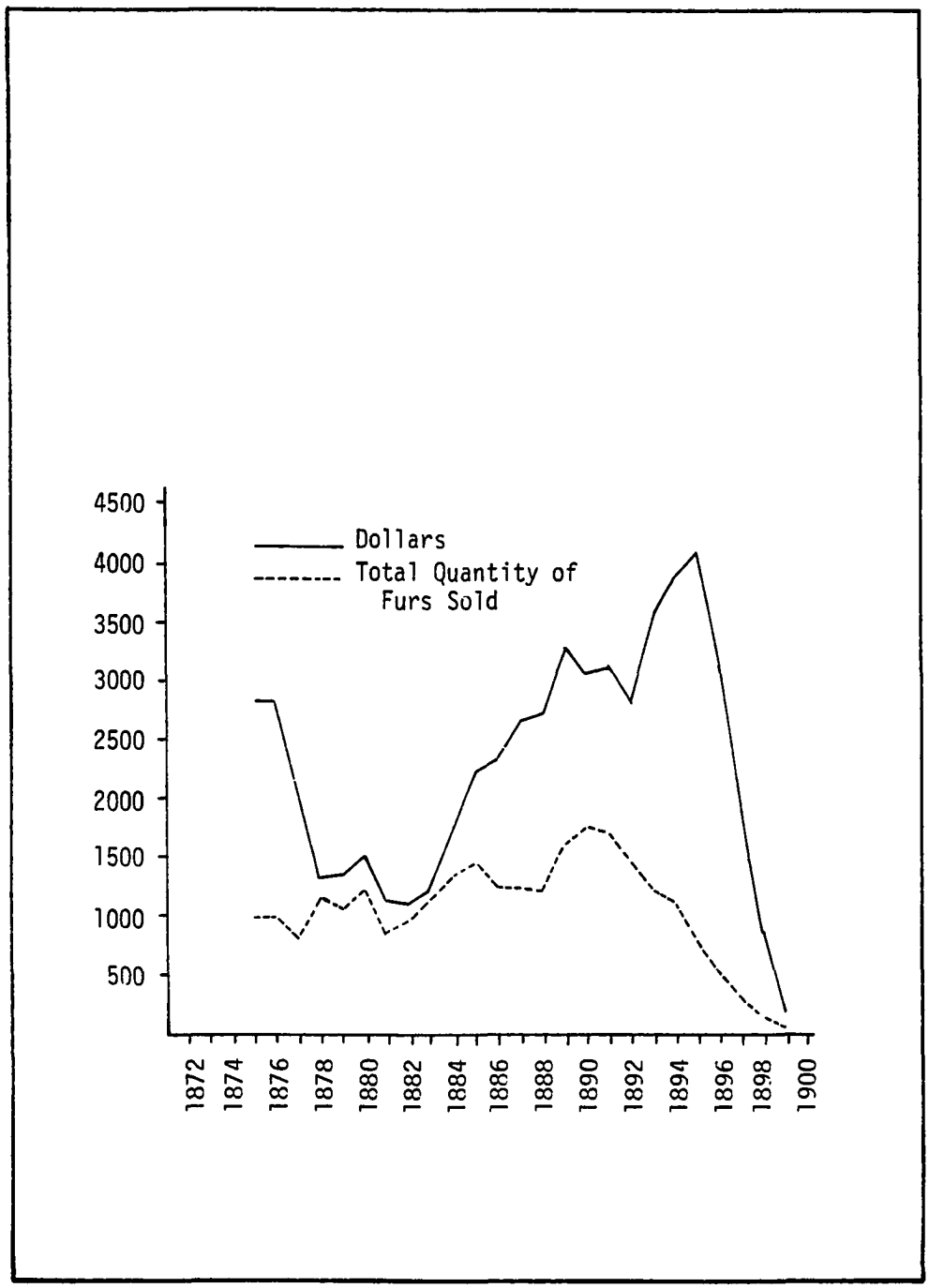

Figure 1. Fur Production at Knik Station, 1872-1901 (ACCRC:Boxes 40-44, Folders 370-89; Box 50, Folders 414-17; Boxes 51-52).

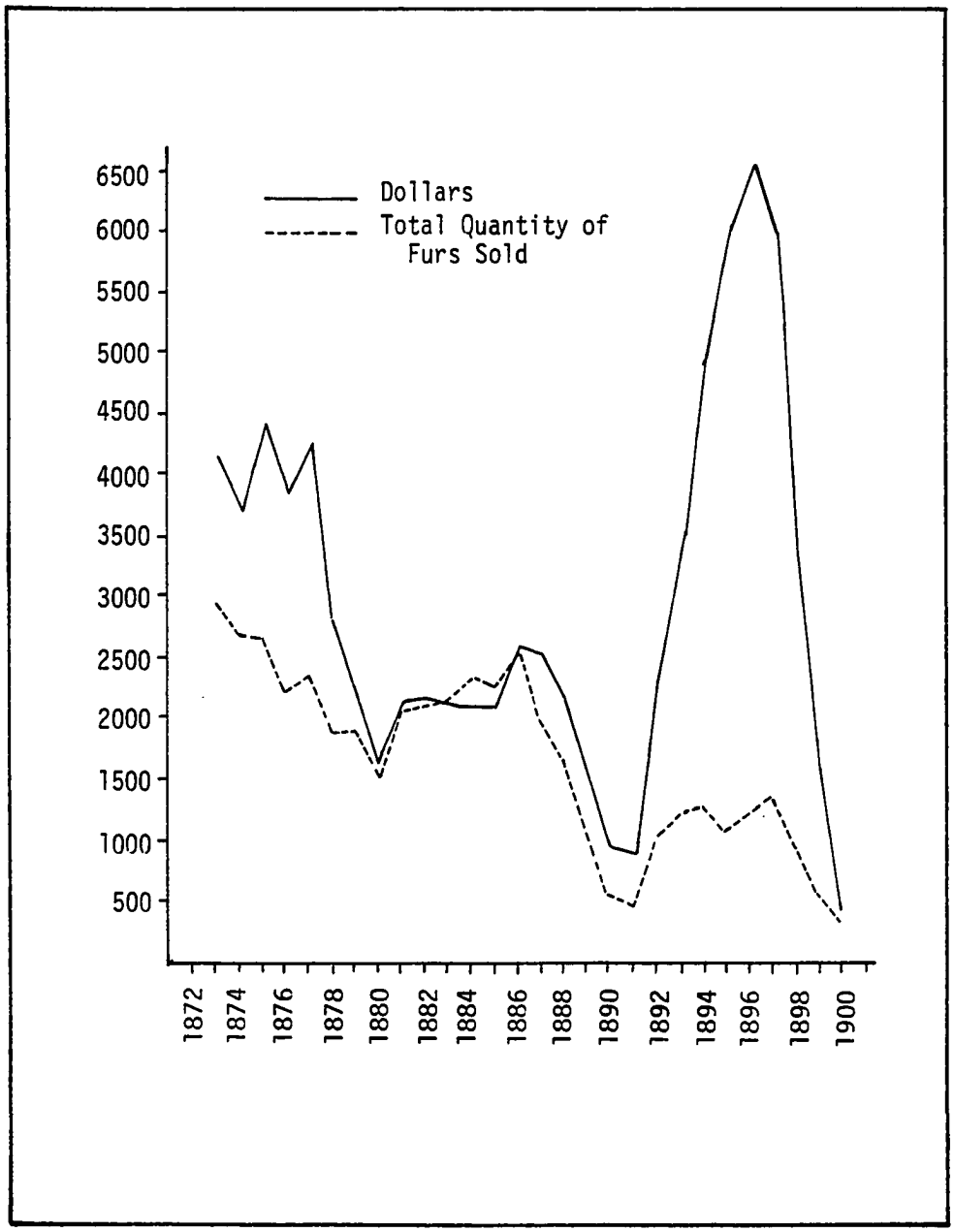

Figure 2. Fur Production at the Prince William Sound Stations of the Alaska Commercial Company, 1872-1901 (ACCRC:Box 3, Folder 45; Box 20, Folders 257-9; Boxes 40-44, Folders 366-87; Box 50, Folders 414-17; Boxes 51-52, Box 132, Folder 1229; Box 134, Folder 1260; Box 147, Folder 1520).

statistics from Nuchek Station primarily, but after 1890, it also incorporates data from Cape Martin, Kayak Island, Odiak and Tatitlek, since these stations, newly established in the early 1890s, intercepted trade that previously had shown up in the Nuchek Station accounts. Only selected furs are represented in the graphs and include: land otter, black or silver-gray fox, cross fox, red fox, black bear, brown bear, beaver, marten, mink, ermine, lynx, wolverine, wolf and muskrat. Not included are prepared moose and caribou skins and miscellaneous products, such as beaver castors, bear galls and swan skins, because these items were not treated consistently in the accounts prepared by various agents at the stations. In addition, I have excluded the furs of sea mammals (sea otters and fur seals) in totals from the Prince William Sound stations, since they are irrelevant to trade originating from the interior. Three-year, running averages of both dollar values and quantities of furs sold smooth out radical turns in each of the graphs.

As Figures 1 and 2 show, the overall trend of the trade in furs at the Alaska Commercial Company's stations in Prince William Sound throughout the late nineteenth century and in upper Cook Inlet after 1890 is that of declining productivity. Indeed, the data indicate a precipitous fall in the quantity of furs sold at the stations of both regions during the 1890s which, by 1898-99, had reached the lowest level of the entire period of record. The graphs portray a decline which can only be interpreted as a disaster in the regional fur business of the Alaska Commercial Company, and in the remainder of this

discussion, I will explore the factors that contributed to the changing fortunes of the Alaska Commercial Company's fur business in upper Cook Inlet and Prince William Sound during the 1890s and the implication of these developments for the fur trade originating from the Copper River.

Although the Alaska Commercial Company's principal business concern throughout the late nineteenth century was the fur trade, expanding American enterprise in Cook Inlet and Prince William Sound altered the character of much of the company's commercial dealings in both regions during the 1890s. Company stores opened at Hope and Sunrise during the mining boom in Turnagain Arm, and business at such stations as Kenai, Odiak and Tyonek took on a more mercantile flavor in response to the growing importance of these points as centers of transportation and commercial fishing. Knik remained the center of the fur trade in upper Cook Inlet, but in Prince William Sound newly established stations at Tatitlek, Odiak, Cape Martin and Kayak and development of a commercial salmon fishery on the delta of the Copper River altered the patterns of the fur trade in that region significantly.

The changing nature of business opportunities in Cook Inlet and Prince William Sound is reflected in the commercial records of the Alaska Commercial Company dating from the late 1890s. One document, the 1898 inventory of buildings in the Kodiak District of the company (ACCRC:Box 44, Folder 388), deserves special mention, because it includes a remarkable assessment of the value of each of the stations

in the business of the company, in addition to a brief description of the stations' principal assets. Because the inventory was compiled at the time that company officials in Kodiak had tallied losses in the fur trade at the end of the disastrous accounting year of 1898, it represents an invaluable appraisal of business conditions throughout the Kodiak District during the uncertain times of the late 1890s. The 1898 inventory is the basis for the following assessment of the fur trade in upper Cook Inlet and Prince William Sound at the end of the nineteenth century.

Company officials appraised Knik Station as a "trading post for fur principally" in 1898. Although it was noted that a few miners were wintering at the station, the inventory mentions Copper River Indians specifically as a principal source of trade at the upper Cook Inlet station. Trade at Nuchek was also "principally furs," and it was thought that future business at the station would continue to center around the sea otter, since "little hunting by schooners has been done and there are still a fair amount of otter reported seen."

Tatitlek Station, which the Alaska Commercial Company had established at the Chugach village in the early 1890s, was unoccupied in 1898, but with promising copper deposits then being prospected in the neighborhood, mining development was a potential source of future business at the station. A store building at Valdez is listed together with the company's buildings at Tatitlek in annual inventories throughout the 1890s (ACCRC:Box 147, Folder 1513), and company officials state specifically that the Valdez store, although unoccupied

in 1898, had been "built to trade with Copper River Indians." This suggests that, during the time that the Alaska Commercial Company maintained a trading station at Tatitlek, the Ahtna had resumed trade across Valdez Glacier to Prince William Sound, but I have not learned more about the history of the Valdez store or Ahtna trade at the station from company records.

Beginning in the early 1890s, the Alaska Commercial Company also stationed a trader at Kayak, located either on Kayak or Wingham ("Little Kayak") Island (de Laguna 1972:103), but the station was abandoned by 1898, and the buildings there, as well as those at nearby Cape Martin, were considered to be of little value to the company, except for resale. In 1898, trade at Odiak was primarily with fishermen and a few miners, and the fur trade was said to be "of no account at this point." Being "at the head of Prince William Sound," however, company officials thought that Odiak would "probably be the rout[e] to Copper River if any miners go in future."

It is quite curious, I think, that, in their assessment of the Prince William Sound stations, officials of the Alaska Commercial Company mention trade with the Copper River Indians only in reference to the store at Valdez. The fur trade at Nuchek apparently was only of local significance by 1898, and although company stations at Odiak, Cape Martin and Kayak may have served as alternative trade centers for the Ahtna earlier in the decade, I suspect that trade coming down the Copper River after 1890 was being intercepted before it reached any of these stations. C. W. Hayes (1892:126) states that in 1891

Chief Nicolai, whom Hayes had accompanied to the coast from Taral in late August, intended visiting the traders at the canneries on the Eyak River, and it was at about this time as well that an independent trader, Charles Rosenberg, established a trading post at Alaganik (Birket-Smith and de Laguna 1938:20-1). In 1895 and 1896, the Alaska Commercial Company sent George Fleming (Sr.) to the Copper River with trade goods, and inventories of merchandise appearing in Kodiak District account books under the heading "Copper River Trading Account" (ACCRC:Box 44) suggest that a trader was sent to the Copper River each year between 1896 and 1900. In 1897, the Alaska Commercial Company agent at Odiak wrote in his journal that a "Stick Indian" came down to the station from the Copper River on March 4, but he already "had sold his fur to Rosenburg [sic] and Fleming" (ACCRC:Box 134, Folder 1264). Although I have not learned a great deal about the traders sent by the company to the Copper River during the late 1890s, they probably were stationed at one of the canneries and did not travel up the Copper River beyond the delta.[18]

The Alaska Commercial Company's assessment of business conditions

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18. Itinerant traders apparently were reaching the Ahtna from upper Cook Inlet during the 1890s. The agent at Tyonek reports in his journal of 1894 that he had "outfitted a man with $200 worth of merchandise to go into [the] Copper River country" in late June (ACCRC:Box 151, Folder 1562). The expedition was inspired by the arrival at Tyonek of a Mr. Hobson, who sold to the agent furs that he had brought down from the Copper River in late May. I have not learned anything about the results of the Tyonek agent's experiment, however, and there is no evidence that Alaska Commercial Company agents in upper Cook Inlet scheduled additional expeditions to the Copper River at any time later in the decade.

at each of the stations of the Kodiak District in 1898 apparently was written before news of an extraordinary event, which was to have an impact upon company business in both Prince William Sound and upper Cook Inlet, had reached Kodiak. During the winter of 1897-98, hundreds of miners sailed north from Seattle to Prince William Sound seeking an "all-American" route to the gold districts of the interior. Their immediate destination was not Odiak, the established head of navigation which Alaska Commercial Company officials anticipated would be used by miners headed for the interior, but Port Valdez, on the rumor that the Russians had established a trail from that point across the glaciers to the Copper River valley (Abercrombie 1900b:586). Six hundred passengers sailed north aboard the Valencia in February 1898, and hundreds more landed when the military expedition under Captain William R. Abercrombie arrived at Valdez in April. During April, May and June of 1898, Abercrombie estimates that 3500 people crossed Valdez Glacier into the interior. By the end of July, a "large village of tents and cabins" had mushroomed at Copper Center (Lowe 1900:591), and the vanguard of the stampeders had reached the headwaters of the Copper River.

Only a fraction of the fortune-seekers, who reached the Copper River during the spring and summer of 1898, remained to wait out the winter and resume prospecting the following spring. Lt. P. G. Lowe (1900:591) writes that he met "not less than 200 returning prospectors between Valdez Glacier and Copper Center" when his contingent set out for the Yukon in July. By August, demand for provisions and clothing

auctioned off by those returning to the coast was so low that many items could not be sold (Benedict n.d.), and the abandoned outfits of discouraged miners littered the trail from Copper Center to the glacier.

The influx of gold-seekers had an immediate impact upon the fur trade of the Copper River. H. C. Turell, the Alaska Commercial Company agent at Knik, wrote Kodiak in September of 1899 (ACCRC:Box 117, Folder 1043) to complain that "there was so much goods taken in and left on Copper river last and this summer that [I] do not expect much trade from Copper River Natives, although one cannot be sure in regard to them," and Addison Powell (1910:77) confirms that local Ahtna received many provisions and goods from miners leaving the country. By the fall of 1899, a trading post "for the purpose of securing furs from the Indians" had been established at Copper Center by Mr. Holman (Powell 1910:170), and it can be surmised that other miners entering the district after 1898 also dealt in furs to a limited extent. These developments no doubt contributed to the Alaska Commercial Company's losses in the fur trade at the end of the decade, but they were losses that would not be reflected in the station accounts until the end of the accounting year in 1899.

Among other factors that contributed to the Alaska Commercial Company's dismal record in the fur trade at the end of the decade, competition accounted for considerable losses tallied by the company by 1898. Although I have learned little about the rival traders who were positioned on the Copper River delta during the late 1890s,

Alaska Commercial Company agents at Knik report that competition was intense in the fur trade of upper Cook Inlet. H. C. Turell stated in his letter of September 18, 1899 to Kodiak (ACCRC:Box 117, Folder 1043) that

> ....traid this summer has been verry dull, but hope for improvement soon. [I] do not think [we] can figure on very large traid this winter, but will try to get my share of it and all the rest possible. The Comp[etition] here is strong, the trade small, and it is uphill business at best.

At the end of the accounting year on April 1, 1900, Turell reported that his gloomy expectations for the previous season had been fully realized (ACCRC:Box 117, Folder 1043):

> Trade has been verry dull here this winter. The interior Natives brought out between 6 and 8 hundred dollars worth of furs. I bid all your price list would allow, but got verry little of it.

In fact, Turell shipped only $59 worth of furs to Kodiak at the end of the season--a tiny fraction of the furs that he estimated had been brought out from the interior during the previous winter. Competition at Knik had been strong indeed.

Considering Turell's poor showing, it is not surprising that during the summer of 1900 the Alaska Commercial Company should have sent Thomas Hammer, the company's experienced trader at Tyonek, to investigate business conditions in upper Cook Inlet. Turell's difficulties were particularly puzzling to the Tyonek agent in light of an agreement between the Alaska Commercial Company and the competition, the

North American Commercial Company, to fix prices in the fur trade of Knik Arm and, presumably, share equally in the profits. The "price list" referred to in Turell's letter of April 1, 1900 was the basis for the companies' agreement, but Hammer, in his report to Kodiak on June 26, 1900 (ACCRC:Box 117, Folder 1043), hinted that North American was subverting the intent of the price list by grading furs more generously than were the Alaska Commercial Company traders. Besides, Hammer complained, "there are other circumstances which would give [N.A.C.Co.] a pull over Mr. Johnston and Turell--viz., Mr. Palmer has a Native Copper River woman and can talk the Indian language." After noting that the competition was also engaged in a brisk business purchasing locally made birch bark baskets, Hammer concluded that the total fur catch available at Knik, estimates that he had obtained from Turell and interviews with the local Natives, amounted to $400 from the Knik Indians and $550 from the Copper River.

Competition indeed had contributed to the Alaska Commercial Company's losses in the fur trade of Knik Arm at the end of the decade, but Turell's and Hammer's estimates of the total value of furs available at Knik in 1899 and 1900 suggest that the combined fur trade from local and interior Natives was hardly capable of sustaining two rival firms in upper Cook Inlet. Although we cannot be certain to what extent developments on the Copper River in 1898 contributed to the overall decrease in trade reported by the Knik traders at the turn of the century, it is evident that the fur trade at Knik had declined and declined significantly from the peak years recorded during

the late 1880s and early 1890s. Moreover, the Knik traders' assessments make it clear that a reduction in trade from the Copper River had contributed directly to the changing fortunes of the fur trade in upper Cook Inlet at the end of the 1890s.

Sketchy evidence suggests that decreased trade from the Copper River also contributed to the overall decline in the fur trade of Prince William Sound during the same time period. A report from the Copper River reaching the Alaska Commercial Company agent at Odiak during the spring of 1897, for example, states that the trade from the "Stick Indians" was "very poor, as their winter's catch was small" (ACCRC:Box 134, Folder 1264), but it is not clear to what extent this single report characterizes a larger trend. By 1898, the combined fur trade from the Copper River Indians and the local Chugach evidently was not large enough to sustain a trader at Tatitlek, and, as noted earlier, the Alaska Commercial Company closed its station there, including the store maintained by the company in Port Valdez.

Thus, among the various factors that contributed to the Alaska Commercial Company's dismal record in the fur trade of upper Cook Inlet and Prince William Sound at the end of the nineteenth century, only competition appears to have figured directly in the company's losses tallied at the end of the disastrous accounting year of 1898. The dislocations in the fur trade that resulted from the stampede to the Copper River in 1898 no doubt added to the company's losses at the end of the decade, but these losses were not reflected in the station accounts until 1899. Competition, on the other hand, had

made serious inroads into the fur business of Knik Station by the turn of the century, and it is reasonable to assume that the company's competitors had contributed directly to the losses recorded in 1898 and probably earlier in the decade as well. In Prince William Sound, the record of the Alaska Commercial Company's competitors is far more elusive, and we can only guess to what extent competition had contributed to the company's losses in the fur trade of that region by 1898.

To what extent, then, does competition account for the declining productivity in the fur trade of upper Cook Inlet and Prince William Sound recorded by the Alaska Commercial Company throughout the decade of the 1890s? Documentation concerning the company's competitors during this critical period is too fragmentary to answer this question adequately, but I would suggest that the Alaska Commercial Company's difficulties cannot be attributed totally to an inability or unwillingness to compete with the smaller firms that, from time to time, challenged the company's dominant position in the fur trade of both regions.

Rather, the data that pertain to fur production at the company's stations at Knik and in Prince William Sound suggest that the disaster tallied at the end of the accounting year in 1898 was simply the culmination of a larger trend of declining productivity which characterized the entire decade. I believe that the data reflect fundamental dislocations in the fur trade at its source and that, ultimately, an ecological explanation will have to be sought to account for the disaster tabulated by the Alaska Commercial Company at the end of the

nineteenth century. Moreover, it can be inferred that a decline in fur production from the Copper River contributed importantly to this trend, since trade with the Ahtna was a major source of land furs at the Alaska Commercial Company stations in upper Cook Inlet and Prince William Sound throughout the early American period. Indeed, assessments of the value of the Copper River trade reaching the coastal stations of the Alaska Commercial Company at the end of the century, although far from comprehensive, support the interpretation that the amount of furs sold by the Ahtna in both regions had declined significantly from the peak years recorded in the late 1880s and early 1890s. Our data suggest that the difficulties experienced in the fur trade of upper Cook Inlet and Prince William Sound were not peculiar to the Alaska Commercial Company alone and that it is possible to speak of a regional collapse of the fur trade that no doubt had significant and far-reaching implications for Ahtna participation in a dual economy. Clearly, economic developments during the critical decade of the 1890s warrant more detailed study, if we are to comprehend fully the response of the Native economy to the changing fortunes of the regional fur trade at the close of the nineteenth century.

The events of 1898 logically conclude discussion of the fur trade era and the contact-traditional stage in Ahtna history. The historical record suggests that all regional Ahtna groups had become eager participants in the fur trade by 1850, and there is little question that that participation had grown to a full commitment to a dual economy by the final quarter of the century. Clearly, the Russian-Ameri-

can Company's plans for the development of an inland fur trade and the establishment of a trade center on the Copper River by 1822 precipitated events that culminated in full commitment to a fur trade economy later in the century. These developments no doubt brought fundamental reorientations to the natural and sociocultural environments, even though Indian-white relations were largely of an indirect nature, or at least occurred primarily outside traditional Ahtna territory, throughout the second half of the century. During the nineteenth century, the Ahtna became inextricably linked to an international commodity market in furs, and the diffusion of the economic patterns of the fur trade throughout Ahtna society must be seen as the most important historical development of the early post-contact era.

CHAPTER 3. THE PAXSON LAKE SITES: INTRODUCTION

The Paxson Lake sites were discovered in 1975 by Charles Holmes, then Anchorage District archeologist for the Bureau of Land Management, during a survey of a proposed campground that was to be constructed between the Richardson Highway and the east shore of Paxson Lake, one and a half miles south of Hufmans (Fig. 3). Holmes briefly tested the sites, and in the summer of 1976, a small crew under the general supervision of John Beck returned to Paxson Lake to undertake more intensive archeological excavation and testing. Several surface features on a low knoll adjacent to the lakeshore were excavated and tested, and a house located on a small point projecting into Paxson Lake immediately northwest of the knoll was investigated. Testing was also undertaken on a second knoll 152 m to the south, but nothing was found there that warrants further description.

Traces of earlier occupations were found both on the knoll and the point, but the greater part of the data presented in this and following chapters pertains to nineteenth century settlement of Paxson Lake. There is little reason to suspect contemporaneity of the historical occupations of the knoll and the point, and in consideration of the spatial as well as temporal discontinuities between them, I think it useful to distinguish between two distinct sites (Willey and Phillips 1958:18). Accordingly, I will refer to these occupations in the remainder of this report as the Knoll Site and the Point Site, respectively. The BLM campground at mile 175 of the Richardson

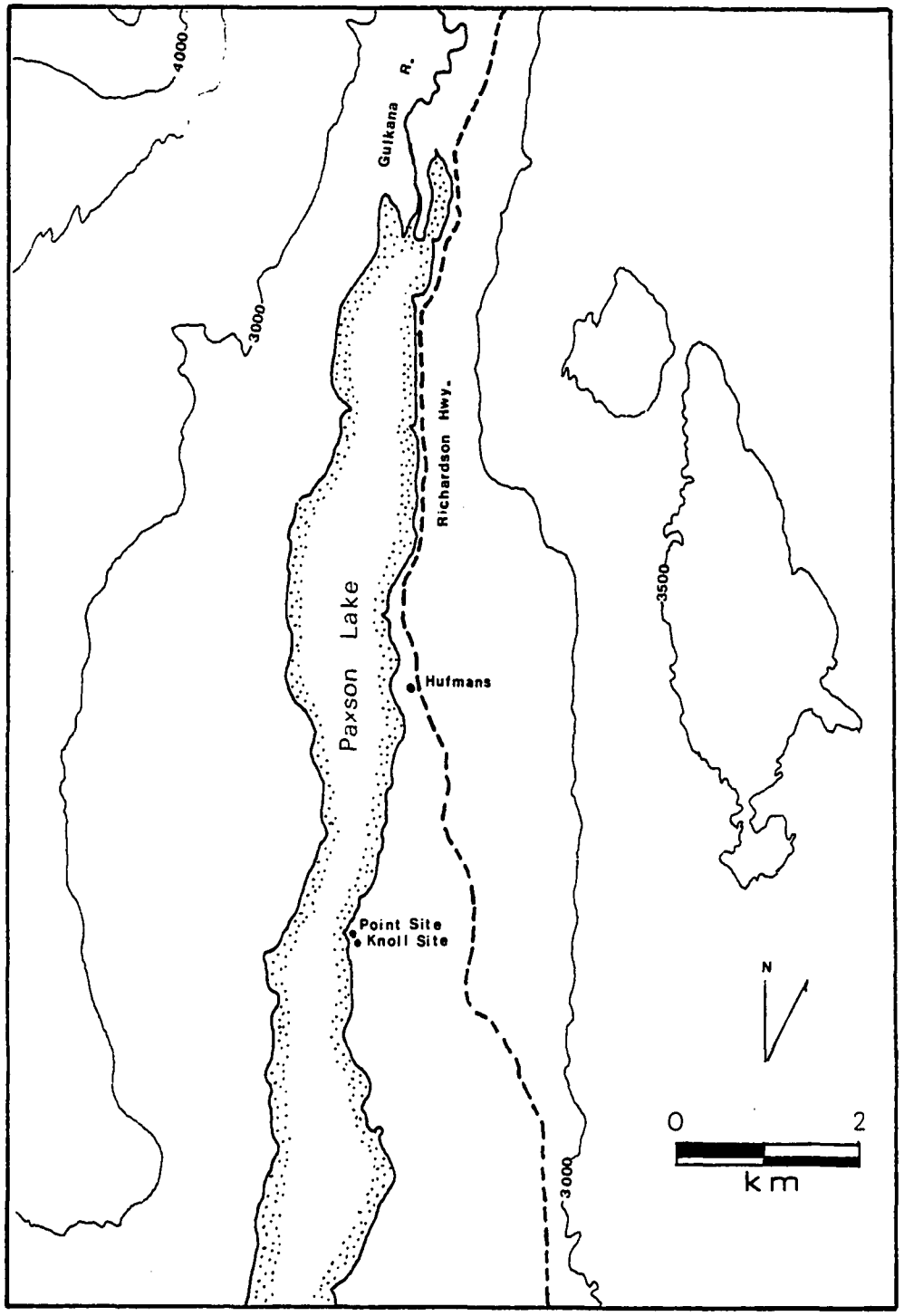


Figure 3. Paxson Lake and Vicinity.

Highway is now in place, and it was largely through the efforts of the Bureau of Land Management archeologists that the Knoll and Point sites were saved from the bulldozer for study and preservation.

NATIVE USE AND SETTLEMENT OF PAXSON LAKE

There is little question that these are Ahtna sites, since Ahtna settlement of Paxson Lake during the nineteenth century has been established by ethnographers working in the area. An elderly man from Chistochina told Frederica de Laguna and Catharine McClellan (n.d.), for example, that there were many villages and moss houses at Paxson Lake when he was a young boy (during the 1890s), and according to what Holly Reckord (n.d.; personal communications) learned about Ahtna sites in the area, two old winter settlements, belonging to the Naltsiine and Udzisyu clans, respectively, were located on the north end of the lake along the eastern shore. The Naltsiine village was said to consist of three houses and was located on the point, subsequently bulldozed by the Alaska (Territorial) Road Commission, that is now the location of the wayside and boat ramp at mile 179.4 of the Richardson Highway. The Udzisyu village had four houses and was located on the "second point" along the lakeshore south of Naltsiine point. It is possible, but not yet confirmed by local Ahtna knowledgeable of the history of Paxson Lake, that the Knoll and Point sites are the remains of the former Udzisyu settlement.

The clan affiliation of these two villages is significant, because, according to Ahtna tradition, both Naltsiine and Udzisyu

claimed hunting and fishing rights on Paxson Lake. "Ownership" of Paxson Lake was once in dispute, but the matter was settled amicably long ago when Udzisyu "gave" the northern half of the lake to Naltsiine during a famous potlatch (de Laguna and McClellan n.d.; John Campbell, fieldnotes; Reckord n.d.).

But above all else, Paxson Lake is remembered by the Ahtna as a place famous for caribou. In former times, caribou were driven into the lake and speared from skin canoes as they swam to the opposite shore (de Laguna and McClellan n.d.; John Campbell, fieldnotes), and it can be imagined that a fence, reported for the Paxson Lake vicinity (Reckord n.d.), was used by the Ahtna to direct the caribou to a specific crossing. The remains of a caribou fence have yet to be identified in the area, but what the archeological record, as preserved at the Knoll and Point sites, does tell us about traditional use of Paxson Lake is precisely what is suggested by oral history--namely, that during the nineteenth century, Paxson Lake was settled by villagers, whose major occupation was the seasonal exploitation of local caribou resources.

ENVIRONMENTAL SETTING

Paxson Lake is situated in the Gulkana Upland, a physiographic subdivision in the northwest portion of the Copper River Basin north of the Lake Louise Plateau and south of the Alaska Range (Wahrhaftig 1965:33-39). This region is drained principally by the Maclaren, Delta and Gulkana rivers, tributary to the Susitna, Tanana and Copper

river systems, respectively. Paxson Lake lies in the course of the Gulkana River, a major clearwater tributary which joins the Copper River about 80 km (50 miles) to the south near the village of Gulkana. The Middle Fork of the Gulkana River drains Dickey Lake, immediately south of the Tangle Lakes District, and the West Fork drains part of the Lake Louise Plateau south of the Alphabet Hills. The region is characterized by rounded hills and ridges from 3500 to 5000 feet (1063 to 1519 m) in elevation (Wahrhaftig 1965:38).

At 2553 feet (776 m) above sea level, Paxson Lake is near tree line, which occurs between 3000 and 3500 feet (911 and 1063 m) in the area (Hanson 1958:7). Based on vegetation maps of the region (Selkregg 1974:129), the lake is situated within an Upland Spruce-Hardwood Forest, but a Moist Tundra ecosystem dominates higher elevations immediately west, north and east of the lake. A Lowland Spruce-Hardwood Forest covers vast areas of the Gulkana Upland and Lake Louise Plateau south and west of Paxson Lake. Open stands of evergreen and deciduous trees intermixed with lichens make this boreal forest type excellent winter range for caribou, and, historically, segments of the Nelchina caribou herd have wintered in the Lake Louise Flat, the Alphabet Hills and the Tangle Lakes District--areas south and west of the Paxson Lake sites.

THE NELCHINA CARIBOU HERD

The Gulkana River is noted for its important runs of red salmon, and the environs of Paxson Lake provide habitat for a variety of

birds, fur bearers, moose and other terrestrial mammals; however, I will restrict discussion of animal resources available in the area to caribou (Rangifer tarandus granti), since it was this one species which was of particular interest to the historical inhabitants of Paxson Lake. The Nelchina caribou herd has been studied by wildlife biologists since 1948, and data pertaining to the patterns of movement and population dynamics of these animals are the most extensive of any available for caribou herds in Alaska (Doerr 1979b:10). Hemming (1971:19-29; 1975), Bos (1975) and Doerr (1979a:618-19; 1979b:10-130) have summarized information from field studies of the Nelchina herd between 1948 and 1972, and their analyses provide the basis for much of the following discussion.

The Nelchina caribou herd is of interest to biologists studying the population dynamics of caribou herds in Alaska, because, since the time that field studies were initiated in the area, the herd has experienced periods of rapid population growth, peak and decline. From an estimated 10,000 animals in 1948, the herd reached a peak of approximately 71,000 animals in 1962 (Hemming 1975:163; Bos 1975:175), but herd size leveled off during the 1960s, and census tallies in 1967 indicated that the herd had entered a period of population decline by the mid-1960s. After 1967, the population declined rapidly from 48,000 to approximately 8000 to 10,000 animals in 1972 (Doerr 1979b:122; Bos 1975:175). Various factors have been advanced to account for the post-1962 collapse, including emigration, increased overwinter calf mortality and reduced calf recruitment, coupled with

increased wolf and human predation (Doerr 1979a; 1979b:127; Bos 1975: 171-76). Recently (1977-79), herd size has been increasing and in 1979 was estimated to be 19,000 animals (Davis 1979:796).

The period of population growth during the late 1950s was accompanied by expansion of the herd's winter range throughout the intermontane region bounded by the Alaska Range on the north, the Chugach Mountains on the south, the Talkeetna Mountains on the west and the Wrangell Mountains on the east. Restricted mainly to the Lake Louise Flat in the early 1950s, the cow and calf segment of the herd began to split seasonally into two or more groups after 1955, and annual shifts in the winter range became more common at this time (Hemming 1971:Figs. 6-9; 1975:163-4). During the period 1965 to 1970, segments of the herd wintered in the Wrangell Mountains, the headwaters of the Gakona and Chistochina rivers, the Lake Louise Flat, the Tangle Lakes District, the headwaters of the Talkeetna River and the foothills of the Alaska Range east of Cantwell (Hemming 1971:Fig. 9). Habitat studies conducted in the early 1970s suggest general deterioration of the winter range following the period of population growth and extension of the herd into previously unused portions of the winter range (Pagau 1975).

Despite erratic shifts in the winter range between 1965 and 1972, the herd's use of its summer range remained essentially unchanged (Hemming 1971:Fig. 10), and, throughout the recent period of record, cows and calves returned each spring, usually beginning in early April, to traditional calving grounds in the eastern foothills of the

Talkeetna Mountains west of the Lake Louise Flat. Spring migrations have followed the most direct routes from the winter ranges to the calving area, and, since 1965, cows and calves wintering on the western flanks of the Wrangell Mountains have crossed the Copper River south of Chistochina, the Richardson Highway between Paxson and Sourdough, the Alphabet Hills and the Lake Louise Flat to reach the Talkeetna foothills in time for the calving season from May 15 to June 10. As the focus of the Nelchina herd's "center of habitation," it is likely that the calving grounds in the Talkeetna Mountains have been used continuously since 1900 and probably throughout the period for which historical records are available (Skoog 1968:285).

Although accurate census figures are unavailable prior to 1948, several investigators have assembled information concerning the early population status of the Nelchina herd from annual Alaska Game Commission reports (1925-48), interview data and late nineteenth and early twentieth century literature sources (Skoog 1968:275-90; Hemming 1975). Skoog (1968:285), for example, believes that there has been a caribou herd resident on the Nelchina home range continuously since at least the mid-nineteenth century, and he (1968:248) has concluded that a population high probably occurred sometime during the period 1848 to 1885, when the herd occupied an expanded winter range comparable to that observed during the population high of the early 1960s. A population low of somewhat less than 10,000 animals apparently occurred in the 1930s or early 1940s (Skoog 1968:290). At that time, the Nelchina herd used only the western portion of its maximum poten-

tial range (Hemming 1975:Fig. 4).

Hemming (1975:Fig. 1) has constructed a population growth curve for the Nelchina herd to accommodate modern census data and historical reconstruction of the herd's early population status. Following Skoog, he indicates that a population high, comparable in magnitude to that of 1962, probably occurred about 1860--a periodicity in the occurrence of peak population growth of approximately 100 years. Restricted distribution of the herd principally to the Talkeetna Mountains during the 50-year interval preceding the population low in the 1930s or early 1940s, Hemming suggests, allowed slow-growing lichen stands to recover from previous heavy use over major portions of the winter range. He concludes that in restricted caribou habitats, such as the Nelchina range, long-term oscillations in herd growth and nomadic habits that permit flexibility in occupation of different sectors of the home range are the principal mechanisms through which caribou have become adapted to alpine and arctic tundra habitats. Although temporary immigration of adjoining caribou herds onto the Nelchina range (which occurred during the late 1930s) may have had a modifying effect upon the wave length and amplitude of the Nelchina herd's growth curve, general deterioration of winter forage following dispersal of the herd over major portions of the winter range is an inherent limit to sustained growth. When carrying capacity is thus exceeded, herd size begins to decline (Hemming 1975:167-8).

Given the historical cycles of population growth and decline and expansion and contraction of the winter range, it is quite likely

that natural fluctuations in the population level of the Nelchina caribou herd have had far-reaching implications for human populations that have relied upon these animals for their sustenance. Middle and Western Ahtna (de Laguna and McClellan 1981:646), Upper Inlet Tanaina (Wrangell 1980:58) and Tanana Indian groups (de Laguna and McClellan n.d.) are known to have utilized the Nelchina herd historically, but the precise nature of the ecological inter-relationships between the caribou of this intermontane region and Northern Athapaskan groups situated at its periphery has been little studied. Students of Ahtna history, for example, have stressed the importance of salmon to the inhabitants of the Copper River, and, although salmon unquestionably was of major significance in the subsistence larder during the late nineteenth and early twentieth centuries, it is not too difficult to imagine that, during periods of peak population growth when caribou are dispersed throughout much of traditional Ahtna territory, these animals played a larger and more fundamental role. F. P. von Wrangell (1980:50-2) tells us that, during the late 1820s and early 1830s, the principal occupation of the Lower Ahtna and their up-river neighbors was hunting "wild reindeer," and, although late nineteenth century travelers through the Copper River country, beginning with Lt. Henry Allen in 1885, indicate a heavy reliance by the Ahtna on salmon, it is possible to interpret these divergent observations as documentation of historical shifts of emphasis in the subsistence base. The relative importance of caribou hunting versus salmon fishing among Pacific Drainage Athapaskans has long been a topic of discussion among North-

ern Athapaskan specialists, but we should probably entertain the possibility that, in the case of the Ahtna, caribou hunting was much more important aboriginally than ethnographers have been able to document for the cultural present. In any event, the inter-relationships between what apparently have been natural fluctuations in the size and dispersal of the Nelchina caribou herd and the patterns of caribou exploitation traditionally pursued by the Ahtna present a fascinating problem for a diachronic study in cultural ecology.

THE GULKANA INDIANS

During the nineteenth century, the Ahtna inhabited all of the Copper River drainage above Woods Canyon, the plateau and uplands west of the Copper River lowland and the extreme headwaters of the Matanuska and Delta rivers. They shared hunting territory in the upper Susitna River drainage with Upper Inlet Tanaina, whom the Ahtna considered relatives and friends, and met Tanana Indians for trade in the headwaters of the Nenana River. Ahtna living along the upper Copper River intermarried with Upper Tanana Indians, and relations with other Northern Athapaskan groups to the east, the Tutchone, were generally good, if infrequent (de Laguna and McClellan 1981:641; n.d.; de Laguna n.d.). To the south the Ahtna's neighbors were the Eyak, who, from their strategic position on the delta of the Copper River, often acted as intermediaries and interpreters when the Ahtna dealt with Russian and American traders on the coast.

Nineteenth century Russian and American traders and explorers

distinguished among several localized groups living along the Copper River, and ethnographers (de Laguna and McClellan 1981:641; de Laguna 1975:89) recognize three major sociocultural groups that existed during the nineteenth century. These groups include the Lower Ahtna, who inhabited the lower Copper River and its tributaries below the Tazlina River; the Middle and Western Ahtna, who ranged from the Tazlina, Gulkana and Gakona River drainages westward across the Lake Louise Plateau; and the Upper Ahtna, who occupied the drainage of the upper Copper River above Gakona. These divisions are based partly on dialectical differences in language (de Laguna and McClellan 1981:641), and, today, linguists recognize four major Ahtna dialects--Lower, Central, Western and Mentasta-Batzulnetas (Kari and Buck 1975: xii-xiv)--that roughly correspond to the sociocultural divisions reconstructed for the nineteenth century.

Although de Laguna and McClellan (1981:653-4; de Laguna 1975:89-99) have described matrilineal clan (sib) organization among the Ahtna and although some discussion of the organization of winter settlements under the leadership of "chiefs" has entered the literature (Shinkwin 1979:35-7; de Laguna and McClellan 1981:656-7), little information is available concerning Ahtna social organization at the level of the local group or band. De Laguna and McClellan indicate that there were eight principal Ahtna bands and have delineated each band's territory and major winter settlements in the context of the three sociocultural groups discussed above (de Laguna and McClellan 1981:Fig. 1). The Middle and Western Ahtna area is divided among the

Tyone-Mendeltna, Cantwell-Denali and Gulkana-Gakona bands. During the nineteenth century, all of the Gulkana River drainage, including Ewan, Crosswind and Paxson lakes, and the drainage of the Gakona River was the territory of the Gulkana-Gakona band, whose major winter settlements--Dry Creek, Gulkana River (Bear Creek) and Gakona--were located along the middle segment of the Copper River near the mouths of the Gakona and Gulkana rivers. The historical affiliation of Gakona is somewhat uncertain, however, and at one time these people may have been more closely aligned with Upper Ahtna from Chistochina (de Laguna and McClellan 1981:Fig. 1; Abercrombie 1900a:579).

To my knowledge, no description of any of the Gulkana villages has come down to us from nineteenth century sources, and the locations of the former winter settlements of the Gulkana people are derived primarily from information concerning the succession of local chiefs (de Laguna and McClellan n.d.), who are closely identified with the principal places of their winter residence. The earliest known chief in the area was kE'RE dE'nIn [possibly Caegge denen?] ("Rivermouth Rich Man"), a Naltsiine man, who lived at Dry Creek Village (Latsibese'caegge--i.e., the mouth of Dry Creek). He was succeeded somewhat later in time by the Dits'i'iltsiine chief Kuwi, the famous midget "Little Weasel," who had eight wives drawn from all the sibs. Kuwi's village was Tatsen, located somewhere below Bear Creek near the confluence of the Gulkana and Copper rivers. In more recent times, the last Gulkana chief (from about 1898 to 1922) was Ewan, who is associated with villages at the mouth of Bear Creek and the outlet

of Ewan Lake.

Other than information about local chiefs, their main winter settlements and a few late nineteenth century references (Powell 1900: 804; 1910:162, 218) that identify the Gulkana Indians as a distinct group of people who ranged through the Gulkana River drainage, we lack detailed information about the composition of the Gulkana-Gakona band and the manner in which these people dispersed through their home territory when not settled into their winter villages along the Copper River. De Laguna and McClellan (1981:644-5, 646) have discussed subsistence-settlement patterns among the Ahtna in general, however, and it is possible to infer something about the seasonal activities of the Gulkana people from generalized reconstructions of the annual cycle (Shinkwin 1979:22-5; de Laguna and McClellan n.d.).

Each local group of Ahtna, in addition to its main settlements along the Copper River, had a well-defined territory extending back from the river, which was exploited seasonally according to the availability of various resources. With the arrival of the first salmon in early summer, the Ahtna moved to fish camps and strategic fishing stations along the Copper River and its tributaries, where salmon were taken in dip nets, dried and put down in caches for winter consumption. In late summer, families moved into the uplands and mountains, and men hunted sheep, goats, moose and caribou, while women gathered berries and trapped parka squirrels. In fall, families returned to the lowlands and began gathering in the settlements along the Copper River. Early winter was a fun time of social activities

and potlatching, when people subsisted largely upon cached provisions of dried fish, meat, berries and other produce. During late winter, more individualistic subsistence activities were pursued, including hunting moose on snowshoes and trapping whitefish, lingcod and other freshwater fish through the ice. Late spring, before the return of salmon in early summer, was often a sad time of hunger and starvation, when resources were scarce upon the land.

There was variability in the annual cycle between the Lower Ahtna area and the upper river region due to differences in locally available resources (de Laguna and McClellan 1981:646). The Middle and Western Ahtna, for example, got more caribou, and the fur bearers that were of major economic importance to Ahtna participants in the fur trade were more plentiful above Lower Ahtna territory. De Laguna and McClellan (1981:646) suggest that, during the height of the fur trade in the nineteenth century, up-river Ahtna probably were more dispersed during the trapping season in late winter and early spring, but we might suspect that, from early April to mid-May, they also scheduled their activities to coincide with annual spring migrations of caribou to the calving grounds in the Talkeetna Mountains. Although some data pertaining to the locations of caribou fences and favored places to intercept caribou at stream and lake crossings in the plateau region are scattered through the literature, present knowledge is only fragmentary concerning the patterns of caribou exploitation in the Middle and Western Ahtna area. In particular, we know little about the social mechanisms that brought people together in

the spring and the fall for labor-intensive caribou drives and the operation of caribou fences, which de Laguna and McClellan (1981:648) indicate were the principal techniques used by the Ahtna to exploit local caribou resources during the nineteenth century.

Oral history about traditional use of Paxson Lake, then, provides some specific information about caribou exploitation in the Middle and Western Ahtna area during the previous century. The nature of traditional settlement of the lake, however, is probably best interpreted in the context of what has been reconstructed about the subsistence-settlement patterns at the level of the local group or band. Presumably, the moss houses and villages reported for Paxson Lake represent minor villages or camps occupied regularly by Gulkana people in season and not major winter settlements on the order of those found along the Copper River. The archeological record has something to say about seasonality and the nature of Ahtna settlement of Paxson Lake during the nineteenth century, and I will return to these topics again, following presentation of the archeological data from the Knoll and Point sites.

PREVIOUS WORK IN THE AREA

William Workman has summarized archeological fieldwork undertaken in the Ahtna area since 1936 in the context of a temporal framework which traces late prehistoric Ahtna culture back in time to the first half of the Second Millennium A.D. (Workman 1976c). Here, I will present the salient features that characterize each of four temporal

units through which Workman has organized this archeological record and discuss in somewhat greater detail the major excavated sites that both illustrate this sequence and provide the core of comparative data for the present study. Interpretation of the archeological remains from Paxson Lake is greatly facilitated by the fact that previous work in the area has provided a relatively extensive body of comparative data that pertain to late prehistoric and historic Ahtna material culture.

Workman has assigned archeological sites in the Copper River area to four general periods, which he (1976c:8) briefly characterizes as follows:

> Historic (c. 1850--present): European derived goods and influence have risen to dominance over traditional material culture items;
>
> Protohistoric (?1770--1850): European trade goods are present, perhaps symptomatic of more fundamental reorientations in Ahtna life in accommodation to the fur trade, but traditional practices and implements are still dominant;
>
> Late Prehistoric (c. 1000 A.D.--1770 A.D.): sites which dating or internal evidence suggest belong to the last millennium of areal prehistory; and
>
> Early Prehistoric (?--1000 A.D.): scattered and diverse evidence for the presence of man throughout the remainder of Holocene time.

Workman (1976c:9) cautions that this time framework "is in need of considerable refinement on the basis of specific subareal research programs." Ethnohistorians, for example, have taken a slightly different approach in periodization of Ahtna contact history (Helm et al.

1975), recognizing "Incipient-Early Contact," "Contact-Traditional" and "Modern or Government-Commercial" stages that encompass the archeological constructs of protohistoric and historic time. I will follow Workman's organizational plan, however, in discussing the major sites that illustrate the developmental sequence as it is presently conceived for the Ahtna area.

Historic Period. Taral, located on the lower Copper River near Chitina, is the best-known site dating from the historic period. Although the excavations that were undertaken at the site by James VanStone in 1954 have not been described in detail, collections from two localities investigated along Taral Creek are of interest for comparative purposes, because, like the collections from Paxson Lake, they include both imported and locally manufactured goods (VanStone 1955:121-3). Imported goods, which include glass beads, cartridges, stove parts and a U.S. quarter dated 1878, are predominant and represent a late nineteenth century collection, at least in part (VanStone 1955:122-3). By 1847, Taral had become the site of Mednovskaia Odinochka, but it is not clear from the evidence presented by VanStone (1955:120-1) whether the site of the former Russian trading post was actually excavated. In his historical summary, VanStone indicates that Taral was occupied by Ahtna throughout the late nineteenth century and finally abandoned in 1911, when the few remaining residents moved across river to the newly established railroad town of Chitina (VanStone 1955:119-20). American prospectors also lived at Taral just before the turn of the century.

Protohistoric Period. Occupation of Dakah De'nin's Village, located directly across the Copper River from Taral, spans the period in early Ahtna contact history when trade goods derived from European sources were first having an impact upon Ahtna material culture (Shinkwin 1979). At the site, Anne Shinkwin excavated two houses (2 and 9) that were occupied during the first and second quarters of the nineteenth century (1816-22 and 1836-38, respectively, based on growth rings of trees used in house construction). Artifacts made from native copper and bone dominate the collections from the houses, while European trade goods are represented by glass beads, a brass bell and iron. Some imported iron was used for locally manufactured awls that duplicate types made from native copper. Shinkwin recovered a great deal of data about house and sweatbath construction that agree remarkably well with information about Ahtna houses in ethnographic and late nineteenth century sources.

Late Prehistoric Period. Present knowledge of late prehistoric Ahtna culture is based largely upon salvage excavations at GUL 077, a series of cache pits and associated late winter camp sites scattered along an extensive ridge system paralleling the south bank of the lower Gulkana River near Gulkana (Workman 1976a; 1976b), and GUL 076, located downstream from GUL 077 at the confluence of the Gulkana and Copper rivers (Clark 1974:36-57c). At GUL 077, Workman excavated or tested 21 cache pits (and multi-cellular cache pit complexes) and two large camp areas at 54 different localities. Artifacts include objects made from native copper, bone and antler, and cryptocrystalline

and coarse stone materials. GUL 077 dates from the first half of the Second Millennium A.D. (Workman 1976b:142-7), and Workman argues that the caches and camps found there can be attributed to people ancestral to the historic Ahtna (Workman 1976a:13-4; 1976b:160-2; 1976c:31-3).

Gerald Clark's analysis of the remains from GUL 076 (Clark 1974: 36-57c) were completed prior to excavation of GUL 077 and without benefit of the wealth of structural data from GUL 077 for direct comparison. Katherine Arndt (1977) analyzed data pertaining to cache pit structure at GUL 077, and her comparison of these remains with the pits at GUL 076 indicates few differences in the structural features found at both sites (Arndt 1977:92-6). I think the evidence rather compelling that the features at GUL 076 represent remarkably well-preserved winter caches like those at GUL 077 and not summer houses as originally proposed by Clark (1974:36-61; Arndt 1977:94). GUL 076 is in part contemporaneous with GUL 077 (Workman 1976c:24) and appears to represent use of the confluence area of the Gulkana and Copper rivers by late prehistoric Ahtna in a manner similar to that seen at GUL 077.

Early Prehistoric Period. The early prehistoric period is largely a residual category in this temporal framework, and we need not review in detail the diverse evidence for the presence of people in the Copper River area prior to A.D. 1000. Frederick Hadleigh-West's work in the Tangle Lakes District (Hadleigh-West 1974; 1975; Workman 1976c: 30), immediately west of Paxson Lake, and salvage excavations at the

Fish Creek site (Cook et al. 1977), located 13 km north of Paxson along the route of the trans-Alaska pipeline, adequately characterize the nature of present knowledge concerning early cultures in the area throughout the remainder of Holocene time. Without diverging into a lengthy discussion of the typologically early materials that typify the non-developmental sequence envisioned for the more than 200 sites in the Tangle Lakes District, it will suffice to note that it is not now possible to derive late prehistoric Ahtna culture from any of the later Tangle Lakes assemblages (Workman 1976c:30). Similar conclusions apparently apply to the Fish Creek site, even though some of the later components ("Basic Analytical Units") are tentatively dated by obsidian hydration to as late as 500 B.P. (Cook et al. 1977:161). As Workman (1976c:30) notes in his summary of the early prehistoric period, "we still have almost everything to learn of the earlier prehistory of the Ahtna area. Available data cannot help us in any discussion of the ultimate origins of the late prehistoric technology here."

By way of summarizing previous work in the area, it can be said that what is presently known specifically about Ahtna archeology rests almost exclusively upon major excavations undertaken along the Copper River. Dakah De'nin's Village, securely Ahtna on the basis of oral history about the site, has been pivotal in establishing continuity between late prehistoric technology represented at GUL 077 and GUL 076 and nineteenth century Ahtna culture, while Taral has suggested something of the extent to which imported goods had made inroads into Ahtna

material culture by the turn of the century. Despite the time differences represented by these four sites, they have provided a fairly comprehensive glimpse of the kinds of activities pursued by the Ahtna when established in a major environmental zone--the Copper River Lowland. At Paxson Lake, we encounter Ahtna in a different environmental setting, and it is now possible to analyze the extent of variation in the archeological record as we examine the nature of season-specific and task-specific activities not represented by any of the sites previously excavated in the Ahtna area.

CHAPTER 4. THE PAXSON LAKE SITES

In this chapter, excavation data from the Knoll and the Point sites (Fig. 4) are described, some basic stratigraphic relationships are established and my interpretation of the functional significance of various features at both sites is presented. At the time that this analysis was in progress, a preliminary report on the excavations at Paxson Lake was prepared by the Bureau of Land Management field crew (Cox et al. 1976), and I am happy to report that similar conclusions concerning the overall meaning of the excavation data were reached independently. There are minor differences of interpretation, however, and, of course, I accept responsibility for any errors in the present report. Regrettably, discrepancies in the identification of various features at the sites emerged early on, and to avoid confusion I have included BLM feature designations in parentheses following the headings that introduce major subsections in the following discussion.

THE KNOLL SITE

The Knoll Site consists of five surface depressions and an associated cultural deposit or midden (Fig. 5). Feature 1, the most prominent surface depression at the site, is situated at the edge of a small, grassy clearing at the crest of the knoll and represents the remains of a probable house. The remaining surface features are scattered around the periphery of the grassy clearing and are overgrown

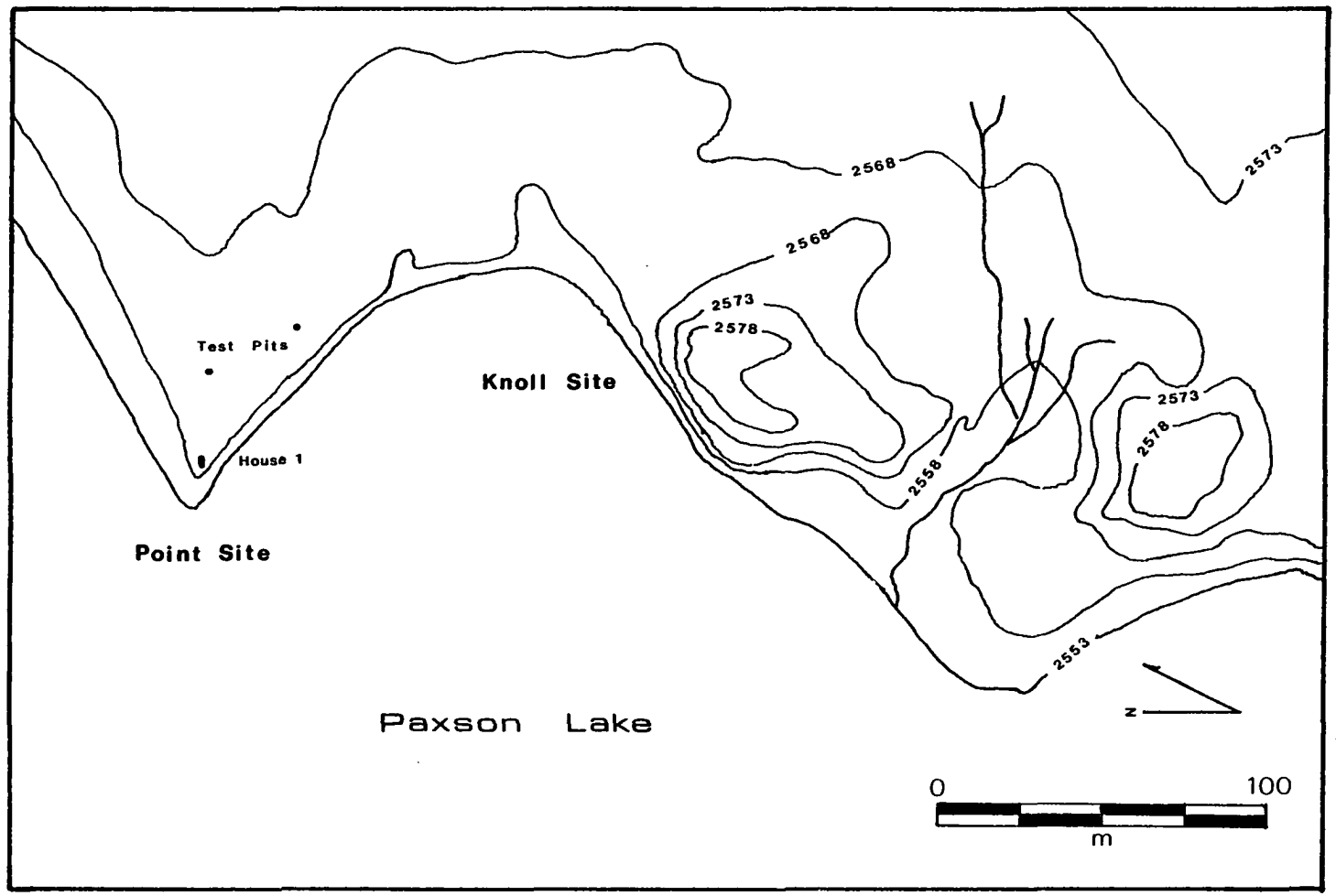


Figure 4. The Paxson Lake Sites.

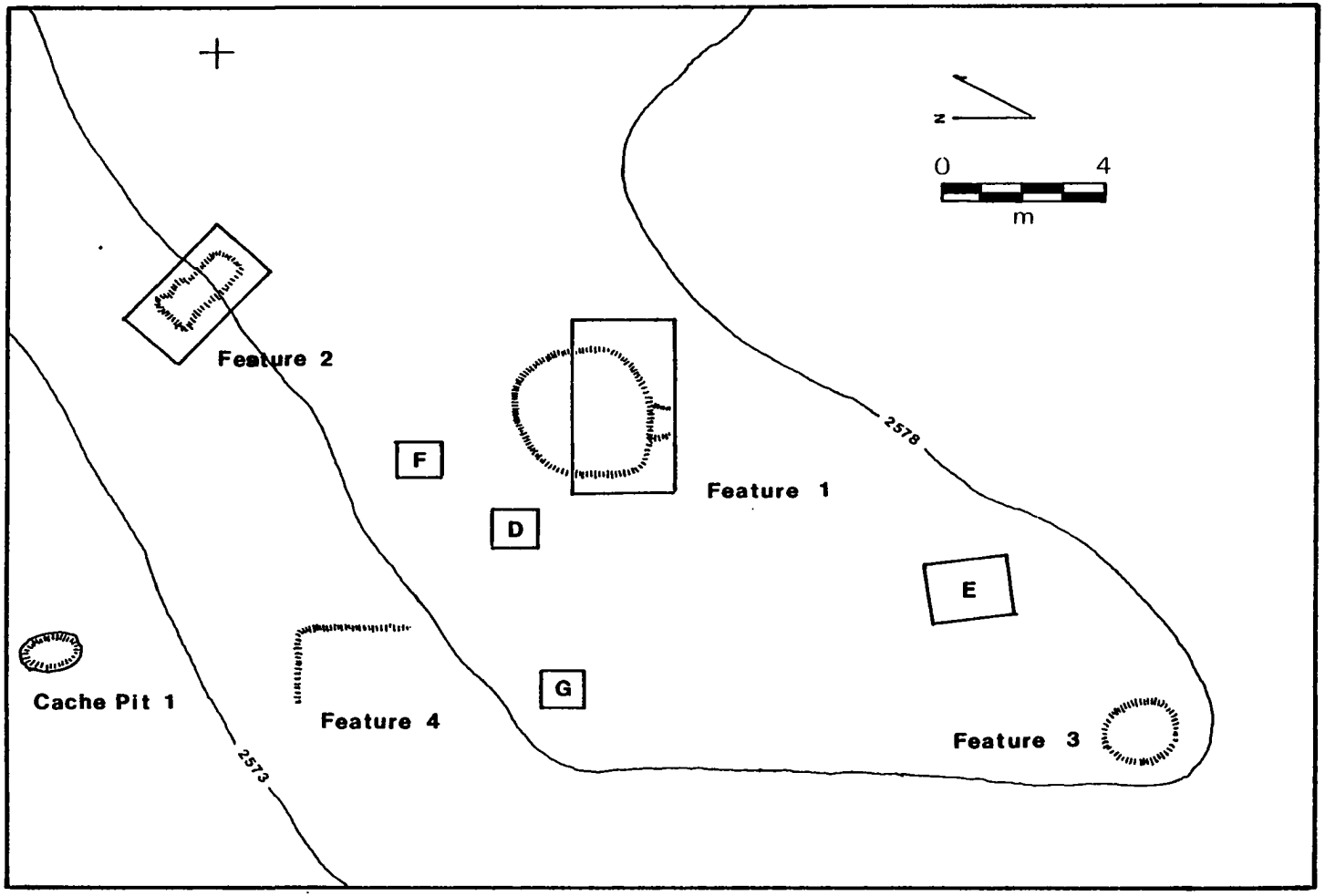


Figure 5. The Knoll Site.

with dense thickets of dwarf birch and other shrubs that are presently encroaching upon the site. Cache Pit 1 was totally excavated, and several excavation units (D, E, F and G) were opened in the midden area. Time considerations precluded extensive excavation of Feature 2 or initial testing of Feature 3 and Feature 4, and the greater part of the work effort at the Knoll Site was directed toward partial excavation of the Feature 1 depression.

The midden was well-defined stratigraphically. It is a thin deposit, which varies from 10 to 20 cm in thickness, and overlies a thin soil, which quickly grades into the underlying sandy gravel substrate. The contact between the buried soil horizon and the midden is a clear, abrupt boundary, marked by obvious color differences, and in areas nearer to the surface depressions, the soil and cultural horizons are further differentiated by intrusive sandy gravel lenses--"spoil" thrown out of the pits dug into the gravel substrate by occupants of the Knoll Site (Fig. 6). The midden contained charcoal and ash deposits, fire-cracked rock, faunal remains, and, occasionally, glass beads and other artifacts in a dark brown, organically rich matrix. The excavators did not recognize smaller stratigraphic units within the midden accumulation.

Scattered faunal remains were recovered from the former sod layer buried by the midden and by the sandy gravel spoil adjacent to Feature 1. Although an earlier component was not clearly identified during excavation, I suspect that these bones were deposited through human agency and that they represent the earliest traces of human ac-

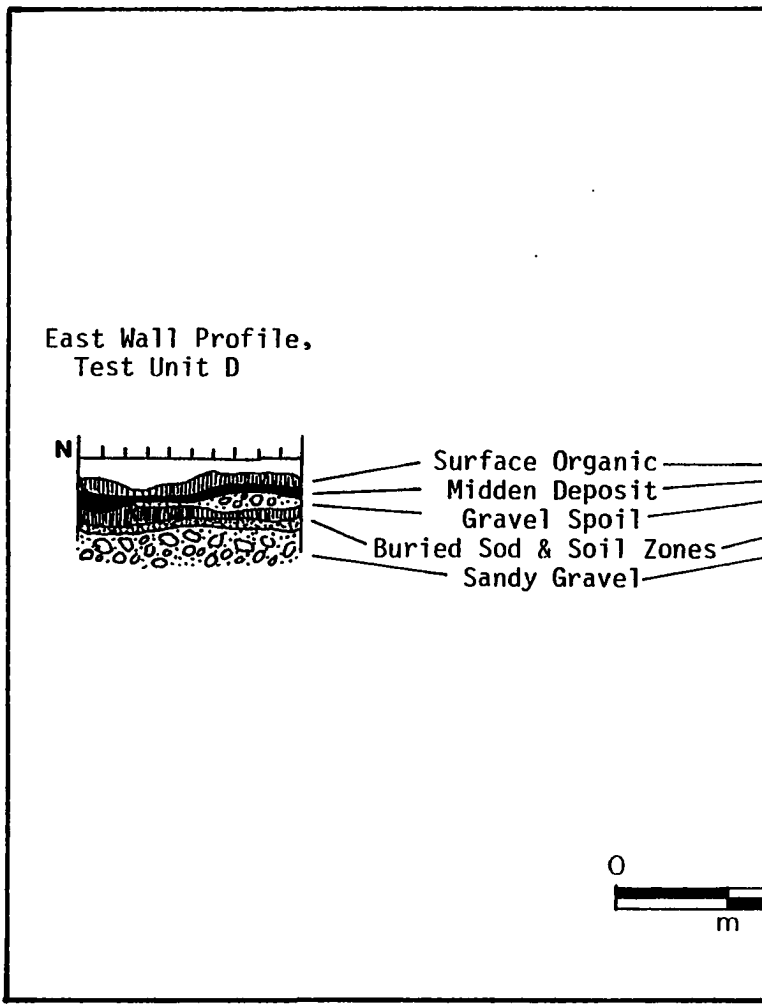
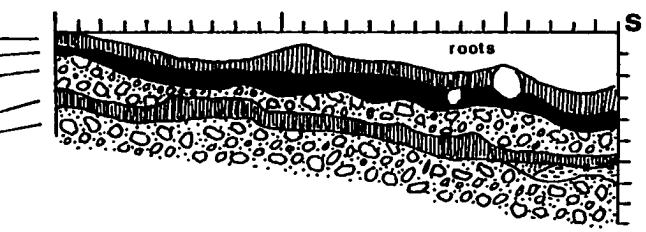


Figure 6. Knoll Site Stratigraphy.

West Wall Profile,
Feature 1



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tivity at the site. Later in this discussion, I will speculate further about an earlier component at the Knoll Site, and it is only necessary to remark here that earlier traces of human activity on the knoll would necessarily have become displaced from their original stratigraphic context wherever later occupants of the site dug into basal gravel, thereby disturbing the surface organic layers.

FEATURE 1 (HOUSEPIT 1)

Feature 1 was slightly rectangular in plan and, prior to excavation, measured 3.5 by 4.0 m. A small, shallow depression, mapped along the southern end of the main depression (Fig. 7), was thought to represent a possible entryway, but analysis of the excavation data indicates that this feature had no particular structural or functional significance. Only the southern half of Feature 1 was excavated.

Feature 1 contained two levels. The lower level contained few remains and virtually no structural elements that could be associated with the pit's original use and function. The upper level exhibited a relatively complex stratigraphy and evidence that the lower level pit feature had been considerably enlarged by later occupants of the Knoll Site. The two levels are differentiated by a well-defined organic layer, which represents a former sod zone subsequently buried by upper level pit fill. The organic layer was 10 to 15 cm thick and was described as being "moss-like" and difficult to screen because of its wet, compacted condition. It contained few remains, other than a glass bead and small bone fragments. The buried sod zone suggests

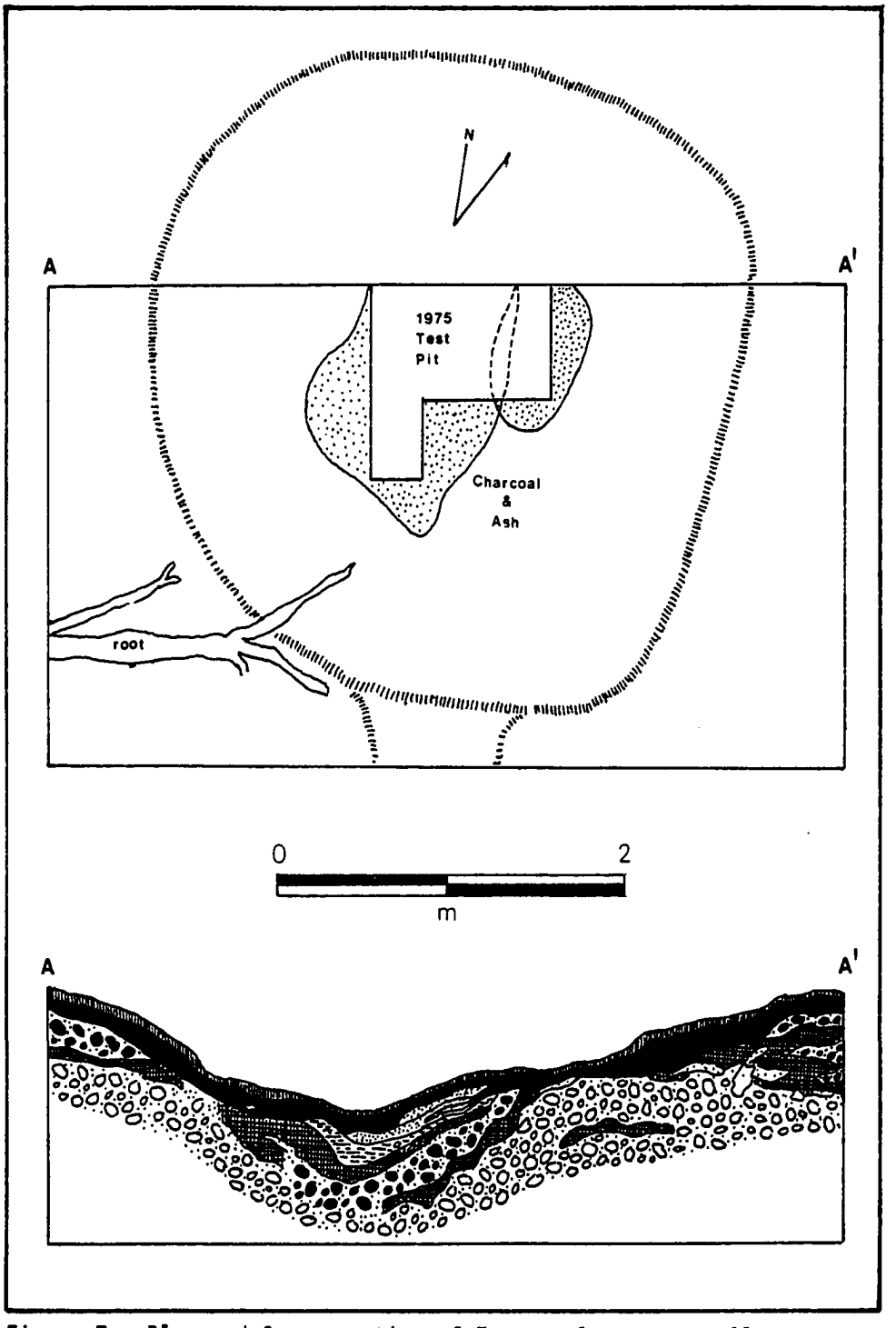

Figure 7. Plan and Cross-section of Feature 1 at the Knoll Site.

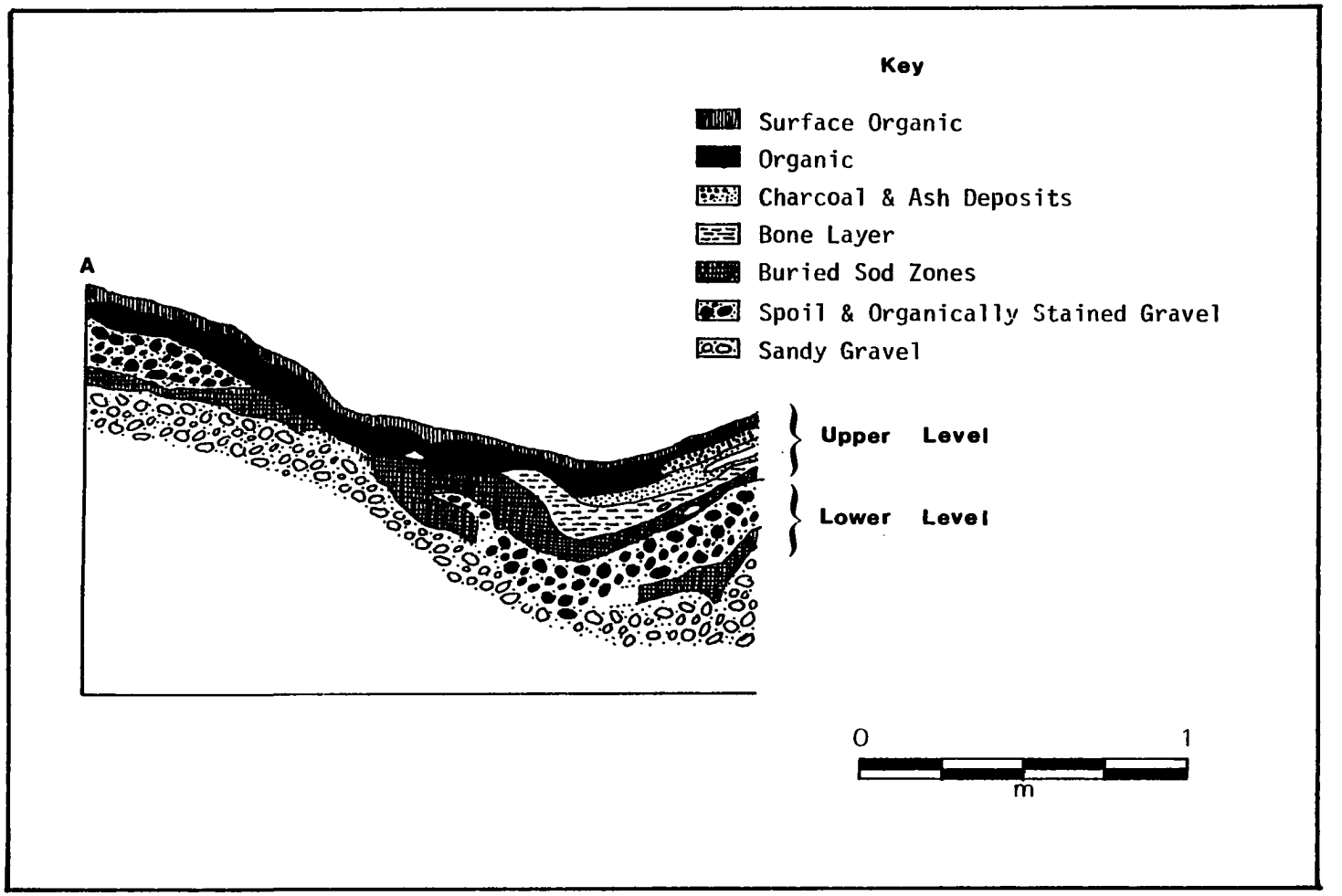

Figure 8. Feature 1 Stratigraphy.

that a considerable interval elapsed between the time of the lower level pit's abandonment and refurbishment of Feature 1 by later occupants of the site.

Lower Level. Dark organic stains and portions of a "moss" layer occurring in gravel at 50 to 55 cm below the pre-excavation surface of the depression, if not conclusive evidence of a former floor of a structure, are indicative of maximum depth of disturbance within the lower level pit stratigraphy. The vertical difference between the level of this disturbance and the former ground surface buried by nearby pit spoil is 80 to 90 cm and represents original pit depth. Cross-sections of the lower level stratigraphy indicate that the original pit width was between 1.0 and 1.7 m, but the original pit length is harder to estimate, since Feature 1 was only partially excavated. Judging from surface dimensions, less compensation for subsequent erosional enlargement, pit length was perhaps 3 m, but this estimate is probably inflated, since there is little reason to suspect that a relationship exists between lower and upper level pit dimensions.

Limited faunal remains, including antler, teeth and bone fragments, a lithic flake, and a white glass bead, came from the lower level pit fill, but none of this material can reasonably be associated with the pit's original use and function. Rather, these materials appear to have been deposited, along with organically stained gravel fill, during various episodes in the natural process of erosional decay and filling-in of the lower level pit feature. Little else can be added to the description of the lower level of Feature 1, other

than that a relatively deep pit of modest dimensions is represented. It is not clear whether this pit was square, rectangular or rounded in overall plan.

Discussion. What can be reconstructed about the size and depth of the pit represented by the lower level of Feature 1 is based on limited data that allow direct comparisons relative to the pit's original function. The small size of this feature and the conspicuous absence of any indication of a central hearth suggest that a cache pit is probably represented, and I believe that this determination gains support from comparison of pit dimensions with those of cache pit examples excavated elsewhere in the Ahtna area.

All available data pertaining to cache pit form are from GUL 077 and GUL 076, the two late prehistoric Ahtna sites located on the lower Gulkana River. Table 2 and Figure 9 summarize pit size and depth of 58 single cache pits and pits within cache pit complexes in a combined sample from the two sites. I have excluded data from pits 24-A, 37 and 45 at GUL 077, since comparison of these anomalously large features with the remaining pits indicates that, in terms of length and width, it is unlikely that they came from the same population as the remaining sample. Estimates of original pit length, width and depth, based on methods proposed by Katherine Arndt (1977:35-53), are used to describe statistically the remaining 58 cache pit examples, which are assumed to approach a normal distribution for each of the attributes considered.

As presented graphically in Figure 9, estimates of pit length

Table 2. Dimensional Data from Cache Pits at GUL 077 and GUL 076. From Arndt (1977) and Clark (1974:34-62).

Feature Number	Width (m)	Length (m)	Depth (cm)
	GUL 077		
26-1	0.7	1.8	--
26-2	1.0	1.0	--
26-3	0.1	0.4	--
26-4	1.2	1.4	--
26-5	0.2	0.6	--
27-1	1.4	1.5	94
27-2	0.6	1.3	65
27-3	2.1	2.4	85
27-4	2.0	2.1	--
28-1	1.8	1.8	111
28-2	1.4	2.1	83
28-3	1.4	2.5	76
28-4	1.2	1.4	78
28-5	1.2	2.2	80
28-6	1.3	1.6	--
28-7	1.7	2.0	--
28-8	1.7	2.4	79
28-9	1.5	2.0	86
29	1.9	5.8	65
30	2.2	2.7	86
31-1	2.4	2.5	--
31-2	2.3	2.5	--
31-3	1.3	1.5	--
31-4	1.3	1.7	--
31-5	2.1	2.1	--
31-6	1.6	1.8	--
32-1	0.8	1.3	70
32-2	1.0	1.5	79
32-3	0.9	1.6	90
32-4	0.3	1.2	102

Table 2. Dimensional Data from Cache Pits at GUL 077 and GUL 076--Continued.

Feature Number	Width (m)	Length (m)	Depth (cm)
32-5	1.8	5.4	93
33-1	1.6	1.9	--
33-2	1.4	1.6	110
33-3	1.0	1.6	--
33-4	0.5	0.9	--
33-5	0.1	0.2	--
34	2.2	4.0	103
36-1	1.6	2.0	125
36-2	1.1	1.1	90
40-1	1.2	1.3	75
40-2	0.1	0.2	--
40-3	0.4	1.0	60
41-1	2.3	3.1	123
41-2	2.2	2.8	112
46	1.3	3.5	82
47	1.3	4.5	75
48	2.0	2.7	65
50	1.8	3.0	60
51-1	0.8	1.7	--
51-2	0.6	0.7	88
51-3	0.8	0.9	--
74	0.6	1.3	--
	GUL 076		
1-A	2.5	3.2	--
1-B	1.8	3.0	--
2	2.0	2.5	--
3	1.5	3.0	--
4-A	1.5	2.0	--
4-B	2.0	2.8	--

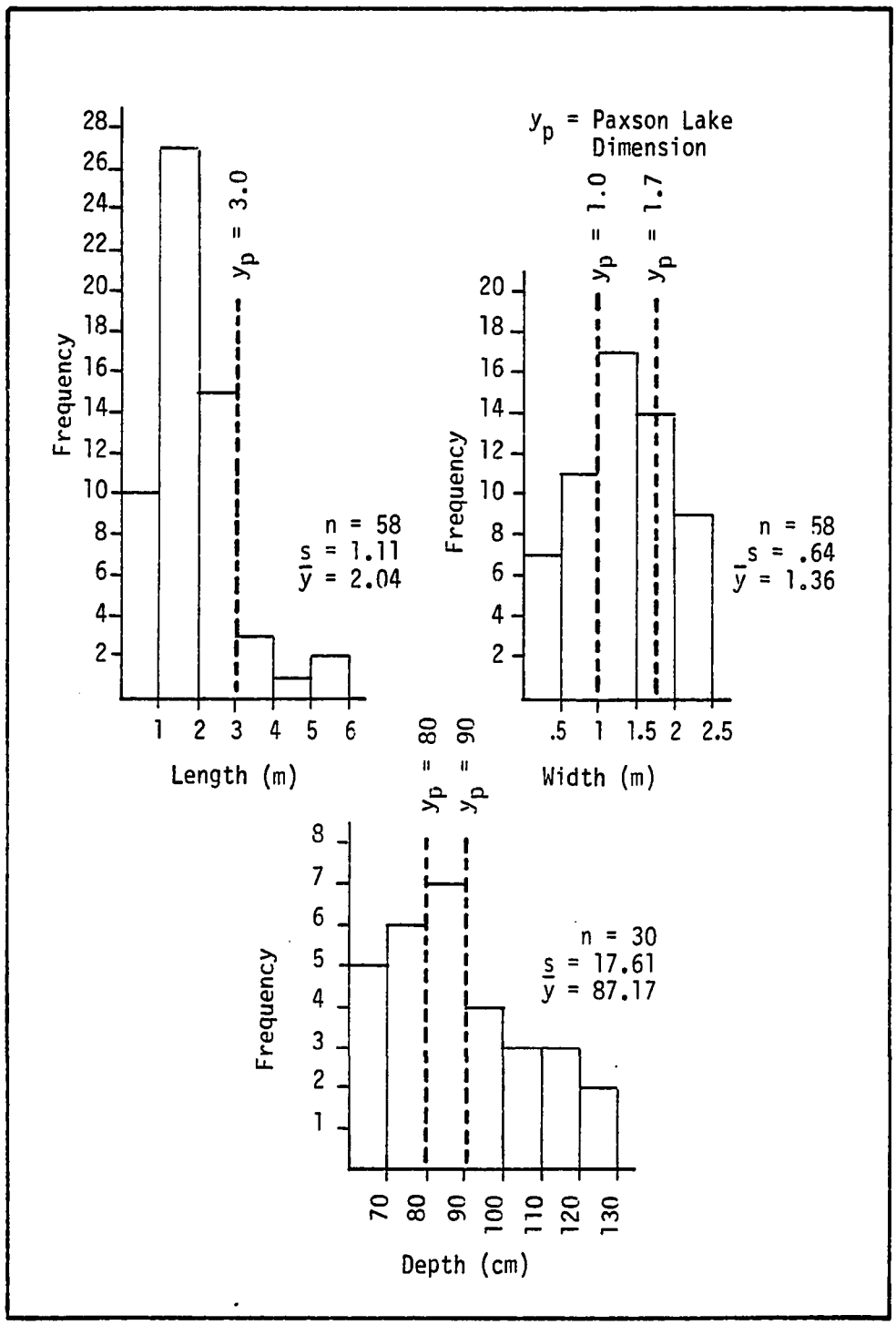

Figure 9. Summary of Cache Pit Dimensions at GUL 077 and GUL 076.

(less than 3 m), pit width (1.0 to 1.7 m) and pit depth (80 to 90 cm) of the Paxson Lake feature all fall within one standard deviation of the mean values for each of these attributes in the Gulkana series of cache pit examples, and it is probable that each of these attributes was drawn from the same population. While the Paxson Lake feature falls easily within the wide range of variation in the size of the Gulkana series of caches, pit depth at Paxson Lake (80 to 90 cm) closely approximates the sample mean of 87.17 cm for the 30 examples from GUL 077. It is quite interesting, I think, that the depth of all these pits should cover such a narrow range of variation (57 percent fall within the interval 70 to 100 cm), and I believe that this attribute--pit depth--is diagnostic of the construction of these types of below-ground facilities. Indeed, I will venture to say, based on depth and size alone, that the lower level of Feature 1 at Paxson Lake represents an example specifically of the winter cache, as defined by the better preserved and numerous examples on the lower Gulkana River.

Upper Level. Immediately overlying the organic layer that differentiates the upper and lower levels of Feature 1 is light brown gravel material so thickly embedded with caribou and other bones that it was variously referred to as the "bone bed" or "bone layer" by the excavators. In addition to a large sample of faunal remains, glass beads and an end-of-the-bone scraper came from this level. As an excavation unit, the bone layer was defined by overlying charcoal and ash deposits, and in its horizontal distribution, it was restricted

to the depression marking the lower level pit feature. Although I have assigned this material to the upper level, on stratigraphic grounds it cannot be associated with the overlying cultural deposits more closely identified with subsequent enlargement of the Feature 1 depression. Likely, the bone layer is secondary refuse and represents a brief interlude when Feature 1 was used primarily as a refuse pit. The excavators remarked that the upper surface of the bone layer was found in a blackened condition, suggesting that these bones had been scorched by the heat of an overlying fire.

Secondary enlargement of Feature 1 by later occupants of the Knoll Site entailed removal of spoil piled along the eastern edge of the lower level pit feature. This material was thrown back approximately 1.5 m, widening the pit appreciably and forming a new berm which was a jumbled confusion of gravel lenses and clumpy organic inclusions. Spoil along the western margin of the existing pit was not disturbed during alteration of Feature 1, and the berm at the south end appears to have been left largely intact as well, although partial removal of spoil in this area may account for the shallow depression mentioned earlier that was thought to represent a possible entryway. I suspect that efforts to extend the north end of the pit were also undertaken at this time, but this is not certain, since the north half of Feature 1 remains unexcavated.

The most conspicuous feature associated with enlargement of Feature 1 is a large ash and charcoal deposit extending over a 1.3 by 1.7 m area in the center of the upper level depression. Two super-

imposed lenses of charcoal were recognized during excavation, and fire-cracked rock, calcined bone, glass beads, the tip of a bone awl, a colored ceramic(?) chip and possible flaking debris were screened from the deposit. No reddish oxidized soil, thick ash accumulations or greasy charcoal rims encircling "cemented" ash deposits were described in association with this feature and are problematical by their absence. The thickest accumulation of charcoal and ash (10 cm) lies at an angle of approximately 25 degrees and conforms to the slope of the lower level depression (Fig. 8).

The remainder of the pit fill consisted of an organic layer associated with the present-day sod zone and was considered stratigraphically co-extensive with the charcoal and ash deposit during excavation. It contained the bulk of the artifacts recovered from Feature 1, including boulder spall scrapers, limited flaking debris, several fragments of copper, a bone point and 111 glass beads. Numerous faunal remains were also collected from this level. No direct or indirect evidence of structural remains were encountered during excavation, and nothing remotely resembling an attached sweatbath was found associated with the Feature 1 depression.

Discussion. It is difficult to imagine what the intent of secondary enlargement of Feature 1 was, if not for the purpose of constructing some sort of dwelling. Excavation failed to recover direct or indirect evidence of structural remains or indications of an attached sweatbath, however, and in the absence of these diagnostic features, the nature of the cultural deposits comprising the upper

level pit fill assume critical importance in determining whether the remains of a house are represented. Specifically, we must consider whether a central hearth and a "living" floor containing refuse associated with household activities are represented in the upper level deposits.

I indicated earlier that the absence of reddish oxidized soil, thick ash accumulations and greasy charcoal rims encircling "cemented" ash deposits in association with the upper level charcoal and ash was problematical, because, had they been present, there would be little question that an in situ hearth is represented. Hearths with such associated features are recurrent in Ahtna archeology and have been described for the camp sites adjacent to the caches at GUL 077 (Workman 1976c:21-49, 121-3) and at GUL 076 (Clark 1974:47-50), the houses at Dakah De'nin's Village (Shinkwin 1979:40-7), and, to anticipate later discussion, in several contexts at the Paxson Lake sites. Although the blackened condition of the upper surface of the bone layer suggests an in situ fire, the nagging suspicion persists that all or part of the charcoal and ash deposit in the upper level pit fill may represent hearth sweepings thrown into the pit as secondary refuse and not the de facto remains of the central hearth of a former dwelling.

Furthermore, convincing evidence of a former "living" floor was not identified during excavation. A floor might reasonably be expected to occur in association with the level of the charcoal and ash deposit, and the best candidate for such a feature occurs in the

eastern half of the upper level depression. I suspect, however, that the compacted organic layer encountered here represents the former sod zone buried by spoil from excavation of the lower level cache pit and subsequently re-exposed during secondary enlargement of the Feature 1 depression. The organic layer contained rodent burrow casts, but few cultural remains other than, significantly, obsidian chips. Stratigraphically, it occurs at the level where the buried sod layer would be expected to be present. Moreover, the charcoal and ash deposits conformed to the slope of the depression marking the lower level cache pit, and it is difficult to imagine that such an irregular surface represents the floor of a former dwelling.

Without clear identification of a former "living" floor, the prospect of distinguishing primary and secondary refuse in the upper level pit fill is remote indeed. Considering what is presently known about Northern Athapaskan housekeeping practices, the bulk and perhaps all of the remains in the upper level likely represent secondary refuse and not the refuse associated with the normal course of day-to-day household activities. In addition, little of what could be interpreted as de facto refuse was associated with the upper level deposits.

Despite the ambiguity of the internal evidence, Feature 1 is the most likely candidate for a former dwelling at the Knoll Site. No other feature on the knoll is large enough to have served this purpose, and the remaining evidence argues forcefully for a focus of household activity somewhere on the site. The total absence of direct or indirect evidence of structural remains is puzzling, since I

think it reasonable to expect that substantial structural elements were used in house construction. Because structural remains were fairly well preserved elsewhere on the knoll, their absence in association with the upper level deposits is probably best explained by removal of these materials from the house site by the inhabitants following abandonment of the dwelling. The absence of the diagnostic sweatbath reflects the expected variation in Ahtna house construction. The overall plan of the upper level of Feature 1 is similar in several respects to House 1 on the point, and I will defer comparison of the upper level of Feature 1 with the substantial body of data that pertains to nineteenth century Ahtna houses following description of the house depression at the Point Site.

CACHE PIT 1 (FEATURE 1)

Cache Pit 1 also contained two levels (Fig. 10). As in Feature 1, the two levels are differentiated by a well-defined "moss" layer, which contained spruce cones and small woody fragments but no cultural remains. The "moss" layer likely is a former sod zone, and, like its counterpart in Feature 1, it suggests that a considerable interval elapsed between the time of abandonment of Cache Pit 1 and subsequent deposition of the upper level cultural fill.

Lower Level. A floor, constructed of split(?) spruce and birch bark strips(?) laid down in a loose style, was found 42 cm below unit datum. The wood formed a continuous layer 3 to 5 cm thick and defined an egg-shaped area, .77 by 1.03 m (.6 m^2) in extent. A den-

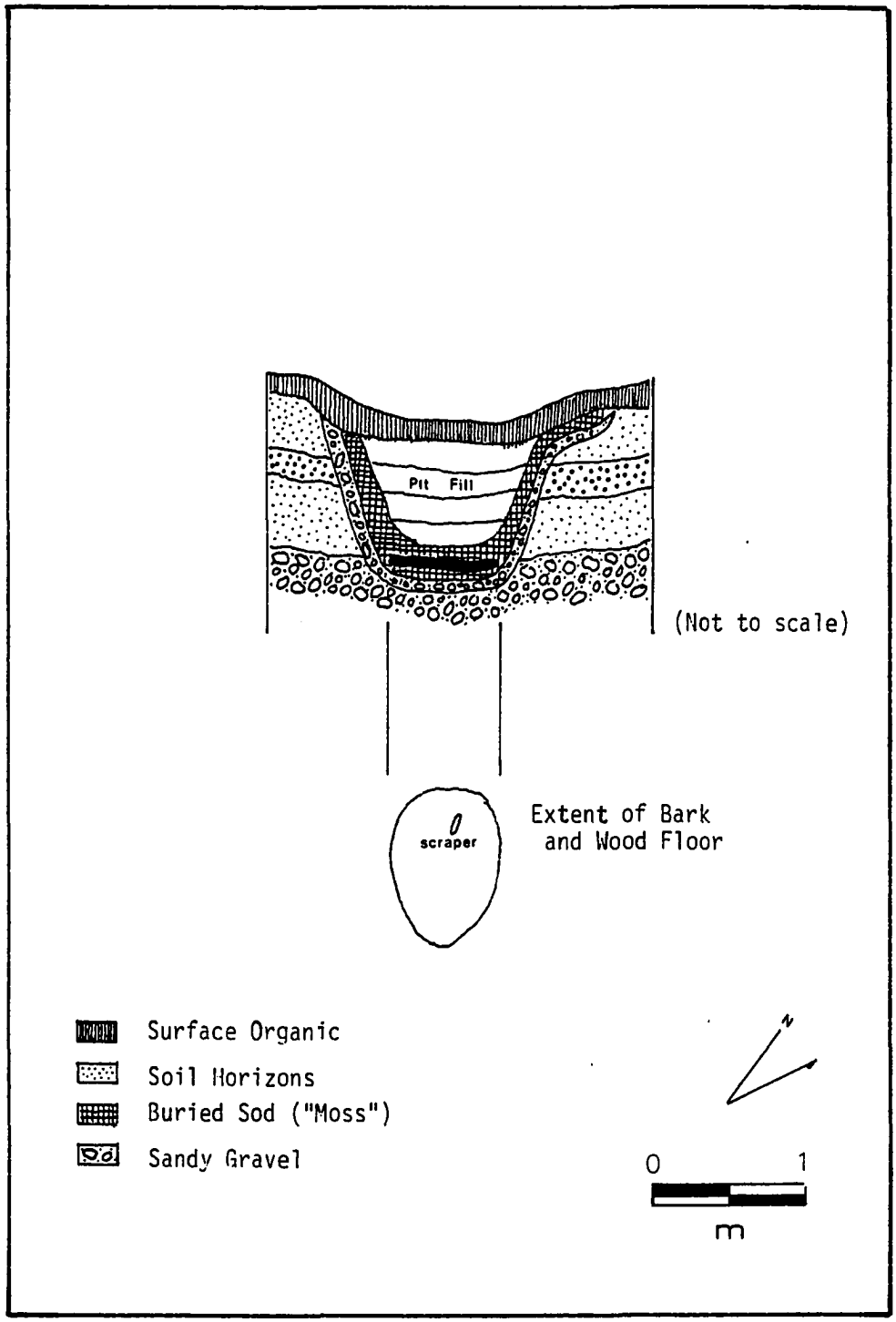

Figure 10. Floor Plan and Stylized Cross-section of Cache Pit 1.

ticulate bone scraper was associated with the floor and bone fragments were found immediately below it in a dark organic matrix. None of the bone fragments were identifiable. Thirty to forty spruce cones also came from the level of the floor or immediately above it and complete the inventory of non-structural remains from the lower level. Although a precise measure of pit depth was not obtained, sterile gravel was encountered 52.5 cm below unit datum, and the original excavated depth of Cache Pit 1, therefore, must have been slightly less than 53 cm. Structural remains other than the floor were not found.

Discussion. Comparison of Cache Pit 1 with summary data from the lower Gulkana River series of caches (Table 2 and Fig. 9; Arndt 1977:108-96; Clark 1974:34-62) indicates that, while there are overall similarities in pit size and the presence and manner of construction of the floor, the Knoll Site cache is significantly shallower in excavated depth than the Gulkana series and decidedly more rounded than rectilinear in form. Its shape is reminiscent of the bark-lined cache reported by Shinkwin (1979:40, 78) from Housepit 2 at Dakah De'nin's Village, but the feature perhaps has greatest overall similarity with the so-called "conical" cache pits from the Tangle Lakes District mentioned by Workman (1976c:28, citing personal communications with F. Hadleigh-West; West n.d.:36). The Tangle Lakes examples are said to have contained caribou bones and no structural remains, but no complete descriptions of these features are available from which to draw extended comparisons.

It is important to emphasize the formal differences between

Cache Pit 1 and the caches at GUL 077 and GUL 076, because I believe that they reflect important differences in the specific storage function of these facilities. It is likely significant that Cache Pit 1 contained no structural remains comparable to the wall and roof (lid) features present in nearly all of the excavated examples at GUL 077 (Arndt 1977:55-193) and GUL 076 (Clark 1974:34-57c), but the most striking differences are its rounded (rather than square-to-rectangular) shape and shallow excavated depth (less than 53 cm), compared to $\bar{x}$ = 87.17 cm at GUL 077.

There are also important differences between these caches in what was found in them. I think it highly probable that the bone fragments found below the floor of Cache Pit 1 represent caribou, and I consider this direct evidence for what had been stored in it. The bone scraper, known ethnographically as a tool used by the Ahtna for the defleshing of the skins of large game animals, suggests that the initial preparation of caribou skins may have also been associated with the use of the facility in some manner. I think it likely that the owners used Cache Pit 1 for the bulk storage of caribou products, perhaps skins as well as meat, that resulted from the initial processing of these animals.

In contrast, the winter caches on the lower Gulkana River appear to have been used for the storage of dried salmon and produce requiring containerization. It is significant, I think, that from the inventory of 13(!) items from the 55 pits at GUL 077, two to four artifacts represent containers (two or three birch bark baskets from Pit

36-2 and a possible fourth container of woven grass from Pit 46) and that at GUL 076 containers were represented importantly, including three birch bark baskets, five wooden trays and a possible woven example. Little could be inferred from the thin scattering of fish and rabbit bones among the pits at GUL 077, but at GUL 076 the orientation and distribution of a large quantity of well-preserved fish remains suggest that the fish had been separated into bundles and hung from the roof (lid) of the structures (Clark 1974:43).

The differences in form and specific storage function between the Paxson Lake and Gulkana series of caches illustrate important theoretical differences in the design of rounded versus cubical facilities. In an interesting discussion of the form and function of storage facilities, Rosalind Hunter-Anderson (1977:296-303) states that an important implication of the design of cube-shaped facilities ("wareboxes") is that it allows differentiation or separation of the stored contents when their sequential and ordered removal is an overriding consideration. Workman (1976b:119-21, 158; 1976c:15) has defined the square-to-rectangular facilities at GUL 077 as winter caches from which stored products were removed periodically in times of need throughout the winter months, and from internal evidence, it appears likely that differentiation and separation of the cached contents into bundles or by containerization was an important aspect of the use of these facilities. Indeed, the concepts of separation and containerization in the caches at GUL 077 and GUL 076 achieve ultimate expression in structural design, as epitomized by the enigmatic multi-

celled cache pit complexes or clusters that dominate the sites.

On the other hand, the contents of rounded facilities ("bins," according to Hunter-Anderson) have "equal target value"--that is, the contents are undifferentiated, and it makes little difference in what order they are removed, or whether all or part of the contents are removed at any given time. Fish pits or fish fermentation pits, of which the bark-lined cache at Dakah De'nin's Village is likely representative, are examples of storage "bins," and I believe Cache Pit 1 at Paxson Lake to be another example of this type of facility. In contrast to the winter caches at Gulkana, the contents of Cache Pit 1 were likely stored undifferentiated and in bulk, and, thus, important differences in use appear to follow from differences in form and function.

Upper Level. The upper level pit fill contained burned human remains that indicate re-use of the abandoned cache pit depression as a burial pit for a cremation. A proximal phalanx from the hand and a carpal bone (possibly the os magnum or the trapezium) from the left hand were recovered from a deposit of dark "burned earth," and a burned rib fragment, possibly (but not probably) human, was found in association. The degree of epiphesial fusion observed on the phalanx indicates that the finger of an adolescent not older than 18 to 20 years is represented (G. Richard Scott, personal communication). Half of a glass bead came from the level of the human remains, but it is not certain whether it was associated with the bones, since the burial and its associational context could not be reconstructed from

the excavation data.

I have not found it expedient to differentiate between various cultural "layers" recognized during the excavation of the remainder of the upper level pit fill, even though it seems probable that this material represents a series of discrete depositional events. Quantities of ash, charcoal and fire-cracked rock make up the deposits in part, but they probably represent secondary refuse and not in situ hearths. Burned and unburned wood fragments, faunal remains, unaltered water-worn cobbles, a boulder spall scraper and a worked piece of antler, possibly intended for finish as a projectile point, complete the collection from the upper level deposits.

Discussion. The cremation is the third example documented archeologically in the Ahtna area. Workman (1976b:28, 44, 124-5) describes two cremation burials at GUL 077 that were interred in shallow excavations or natural depressions covering relatively extensive areas (1.25 by 1.50 m and 1.2 by 3.2 m, respectively). An ornamental bone pin was associated with one individual. At Paxson Lake, an existing pit was consciously selected for the disposal of the remains (because it was winter?), and it is possible that the glass bead was an item of personal adornment that was part of the interment.

Cremation was the preferred method of disposal of the dead by the Ahtna during the early nineteenth century, and the pattern which emerges from the archeological record is reasonably consistent with what has been reconstructed about aboriginal Ahtna funerary practices from ethnographic sources. De Laguna and McClellan (n.d.) indicate

that the ashes of departed loved ones were conscientiously collected and placed in a birch bark box for later interment.

Little can be said about the remaining upper level pit fill, except, importantly, what it suggests about refuse disposal practices. I consider the upper level pit fill to contain direct evidence that hearth sweepings were thrown into the pit as secondary refuse. It suggests that the focal point of household activities was elsewhere at the site and that refuse disposal was an important process in the formation of cultural deposits on the knoll.

FEATURE 2 (FEATURE 2)

Feature 2 was a small, shallow depression, rectangular in plan and heavily overgrown with dwarf birch and other shrubs. It contained structural remains, but it is difficult to say anything conclusive about their meaning, since time considerations allowed only preliminary excavations at the Feature 2 locality.

Substantial wood remains, approximately 2 m long, 25 to 42 cm wide and 25 cm thick, were found shallowly seated in a narrow trench oriented east to west. The trench cut through former sod and soil zones into gravel, and spoil from its excavation had been thrown to the south (outside?) of the structural elements, burying fire-cracked rock, faunal remains and two glass beads associated with a former sod zone. A knife came from the gravel immediately adjacent to the entrenched structure.

Two small hearths were located north and east of the structural

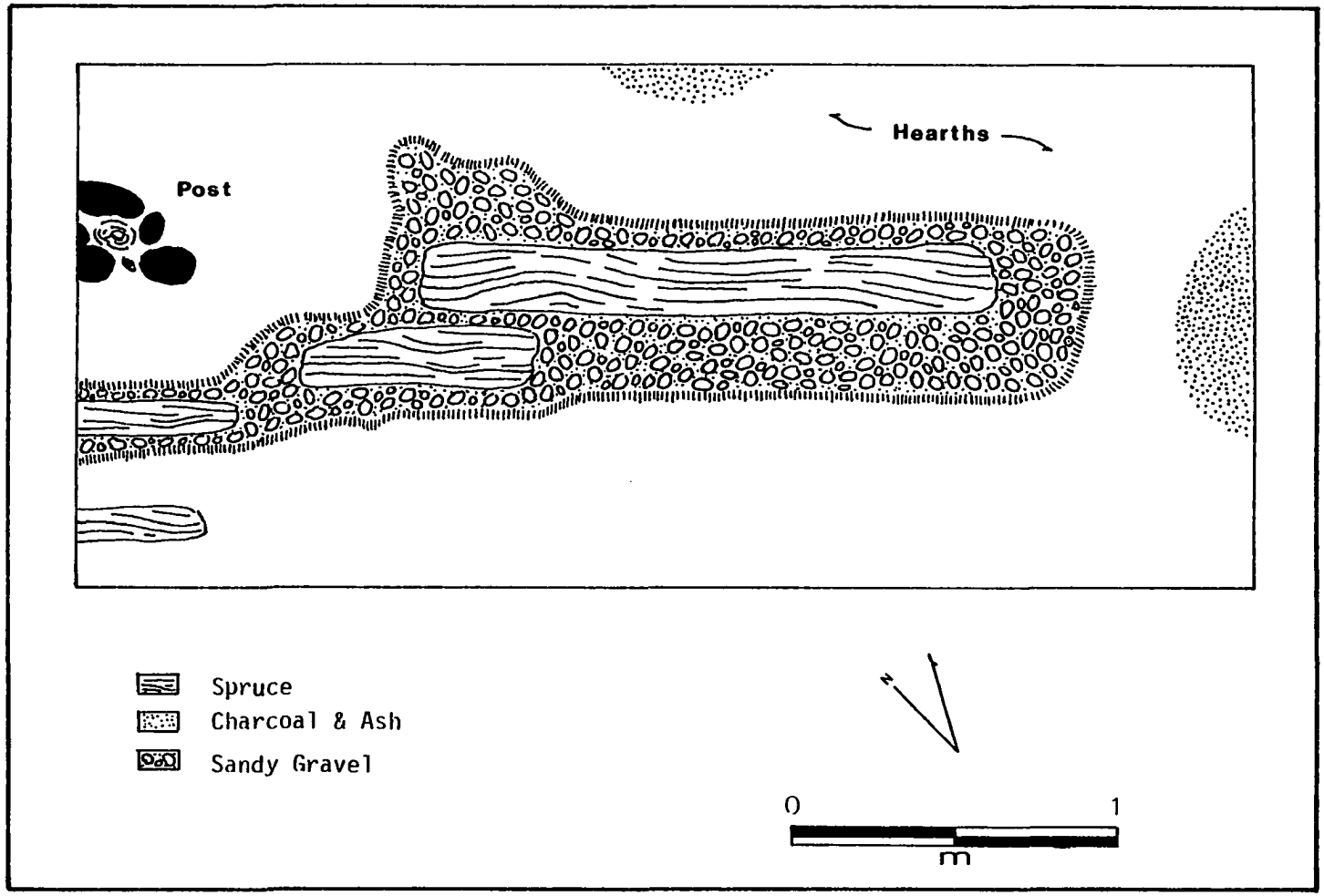

Figure 11. Plan of Structural Remains from Feature 2 at the Knoll Site.

remains (Fig. 11). The largest was less than 60 cm in extent and contained a thin ash lens encircled by a black charcoal rim. The hearths are associated with the sod layer cut through by the entrenched structure and likely antedate its construction.

The remains of a slender post, 12 cm in diameter, were found at the west end of the entrenched structure and slightly above it. Four cobbles, which encircled the base of the post, gave added support. An unspecified number of poorly preserved spruce poles, 20 cm in diameter and over 2 m in length, were associated in the surface organic layer of Feature 2. Their orientation was generally parallel to the more substantial structure which they overlay, but a relationship between the poles, the entrenched structure and the post was not clearly established during excavation.

Discussion. This area was clearly a focus of activity prior to the entrenchment of the structure, and Feature 2 appears to have been a relatively late construction at the Knoll Site. Although structural remains are clearly represented, major below-ground excavation for a house or a cache does not appear to be present. Feature 2 perhaps represents nothing more substantial than the remains of a lean-to or a drying rack, but I hesitate to speculate further about the use and function of this feature, given the limited nature of the evidence that is presently available.

FEATURE 4 (FEATURE 4)

Feature 4 was not excavated, and its overall significance has

not been determined. It is probably of artificial origin, however, since profiles in a nearby test unit show superimposed gravel lenses that could only represent spoil derived from the Feature 4 depression. Feature 4 is generally rectangular in plan and represented by a shallow depression which measures approximately 2.75 by 2 m.

SITE SUMMARY

The excavation data presented thus far suggest that the Knoll Site was occupied and abandoned on several occasions in the recent and more remote past. I will now summarize the evidence for multiple occupations of the knoll by recapitulating the major stratigraphic relationships identified during excavation of various features at the Knoll Site.

There is reason to suspect that an earlier component is associated with the sod zone buried by the midden and by spoil from the pits dug by later occupants of the site. Scattered faunal remains were the only evidence of such a component found in situ, but the traces of a flaked stone industry recovered from the lower and upper levels of Feature 1 likely belong to this earlier component as well. Two obsidian flakes from below the charcoal deposit in the eastern half of the upper level of Feature 1 perhaps were recovered from their original stratigraphic position, but the remaining lithics of cryptocrystalline stone came from ambiguous and secondary contexts within both levels. On typological grounds, I think it improbable that these remains are associated with historic occupation of the knoll, and I am

more inclined to think that they are earlier materials that became mixed with later deposits at the time of excavation of the lower level cache pit and when Feature 1 was enlarged by later occupants of the site. A flaked stone industry is not represented extensively among materials recovered from Feature 1, but, since it suggests that a mixing of deposits has taken place, there are certain analytical problems that must be addressed in later discussion of the Knoll Site collections.

There is convincing stratigraphic evidence that the lower levels of Feature 1 and Cache Pit 1 predate the main historical occupation of the Knoll Site by a considerable period of time. The lower levels of both these features are undated, and their possible contemporaneity can be argued only on the basis of their analogous stratigraphic positions below deposits more clearly dating from the historic period. No historic age materials that could be associated with the use of the two facilities were found, but collections from the lower levels of Feature 1 and Cache Pit 1 represent small samples indeed. The caches indicate a more ephemeral use of the knoll and likely represent a late prehistoric or protohistoric occupation of the Knoll Site.

I have assigned the upper level of Feature 1, the upper level of Cache Pit 1 and Feature 2 to a single historical occupation of the knoll. It is also probable that the bulk of the midden accumulated at this time, but this cannot be demonstrated conclusively by the stratigraphic evidence. The midden clearly postdates excavation of the lower level of Feature 1, but it is not certain how much of it is

to be associated with the occupation represented by the caches and how much with the main historical occupation of the site. The best that can be done at present is to consider the midden mixed, no doubt attributable in large measure to historic occupation of the knoll, but probably including the refuse from an earlier utilization of the site as well.

THE POINT SITE

House 1 was the only surface feature found at the Point Site. House 1, located at the tip of the point (Fig. 4), had been constructed in the swale between beach ridges that parallel the south shore of the point. The gravel beach ridges are stabilized by grasses, low brush, willows and other vegetation, but in places, particularly along the north side of the point where they intersect the shoreline, the beach ridges are presently being eroded by wave action. Only the eastern half of House 1 was excavated. Two test pits, located inland approximately 24 m and 46 m east of the house, respectively (Fig. 4), were also excavated, but they produced no cultural remains.

The natural stratigraphy of the point in the vicinity of House 1 is poorly understood, since time considerations precluded excavation in areas other than inside the housepit itself. I suspect that the beach ridges are of relatively recent deposition, however, and that they buried a sod zone at the time of their encroachment onto the point. The former sod zone is represented in unit profiles (Figs. 12 and 13) as a thin (2 to 3 cm), organic layer with

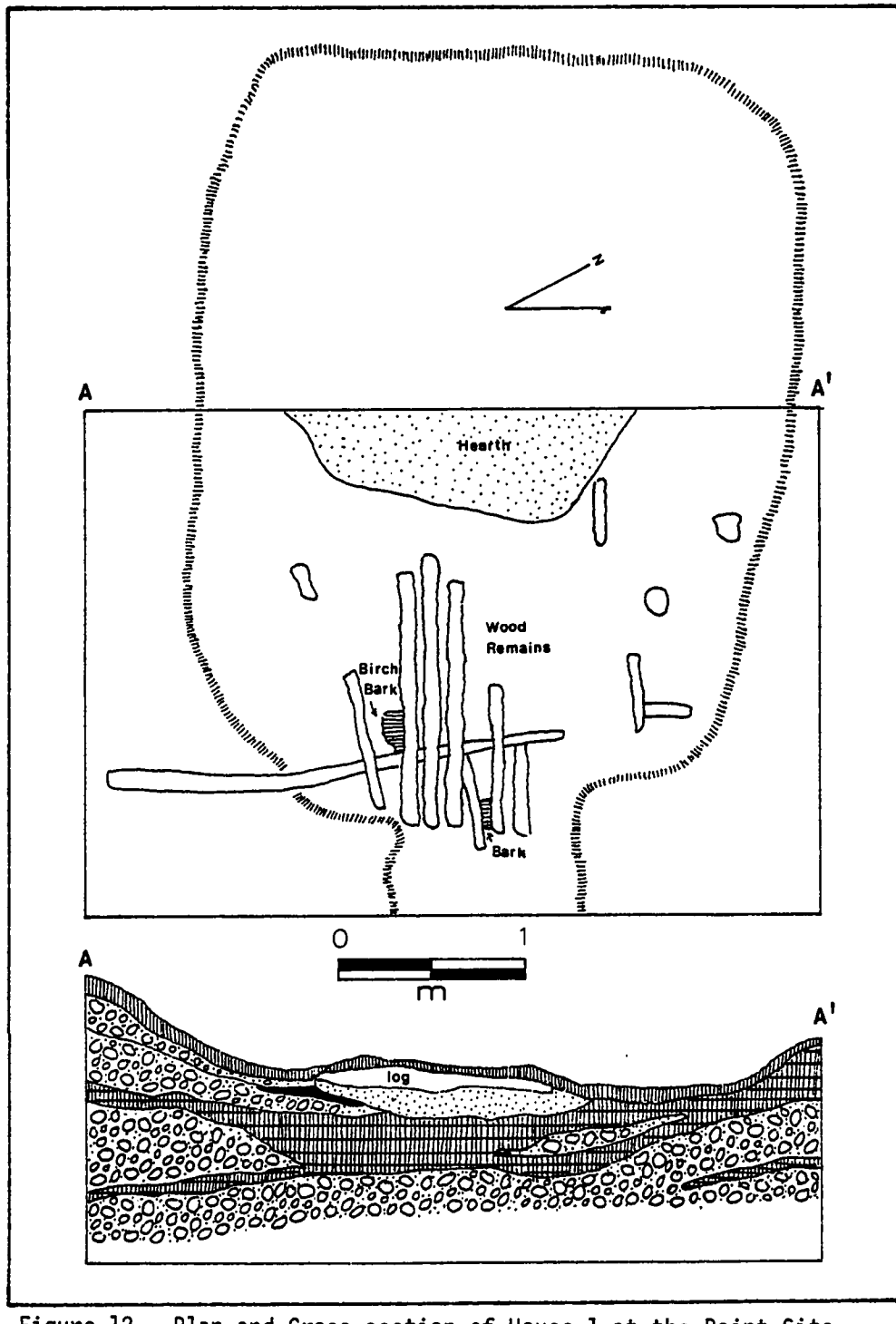

Figure 12. Plan and Cross-section of House 1 at the Point Site.

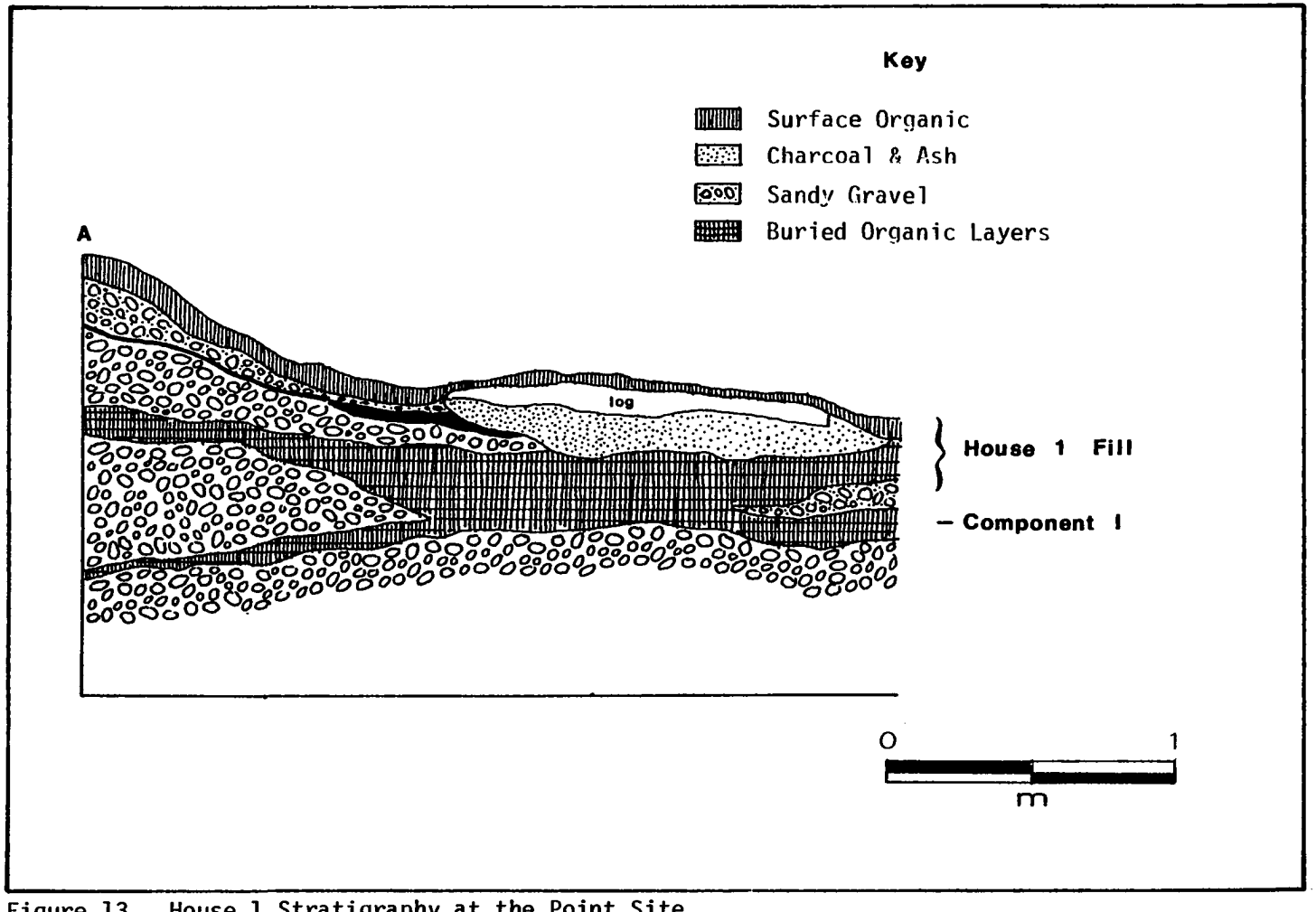

Figure 13. House 1 Stratigraphy at the Point Site.

abrupt upper and lower boundaries and was described as having a compacted, "mossy" texture during excavation. The origin of the organic layer is suggested further by faunal, lithic and other cultural debris associated with it in an undisturbed context. These remains are stratigraphically prior to construction of the house, and I think it probable that they represent an earlier occupation of the Point Site, which I have designated Component I. The temporal relationship between the beach ridge deposits and house construction is more certain, and, clearly, formation of the gravel ridges antedates construction of House 1 on the point.

In constructing their house on the point, later occupants of the site dug a pit between the beach ridges to a depth of approximately 30 cm below the natural ground surface. Component I was left undisturbed by this activity along the sides of the house, but toward the center of the housepit depression these excavations cut into and through the organic layer containing Component I, mixing the earlier remains with housepit spoil. In some areas, house deposits appear to have directly overlain the Component I organic layer and difficulties were experienced in differentiating these two cultural levels during archeological excavation.

Two glass beads, a bone fragment, burned wood and a concentration of cobbles were found outside the southeast corner of the house depression buried by spoil from historical excavations for the house. These remains predate construction of House 1, but nothing further can be said about their significance, since little of this occupation

was encountered during excavation. The remainder of the deposits are associated with construction and occupation of the house and post-abandonment phases in the natural process of deterioration and decay of the housepit depression. They will be described in more detail in the discussion of the House 1 deposits.

COMPONENT I

Little of Component I was isolated during excavation in an unambiguous context. It contained flaking debris, caribou bones and fire-cracked rock associated with an extensive concentration of charcoal. Several pieces of wood, described only as "logs or beams," were found with the charcoal, but it is unknown whether there was any discernible pattern in the distribution of these remains and the fire-cracked rock.

Because an earlier component was not recognized during excavation, a serious problem was encountered during stratigraphic analysis in separating Component I materials from remains recovered from the house floor. Nevertheless, I have tentatively assigned additional lithic material, on the basis of its probable stratigraphic position, to the Component I assemblage. This procedure increased the flake sample to 26, including examples of the same stone material found in less ambiguous contexts; added a possible wedge, a roughly shaped stone implement and a questionable boulder spall scraper to the artifact inventory; and increased the faunal sample by a yet undetermined quantity of caribou and, possibly, other bones. The wedge and a num-

ber of flakes in the sample exhibit evidence of polishing from beach rolling. A charred, pointed stick was found in the housepit spoil, but it was not collected.

It is perhaps appropriate to mention here something of the incidental surface finds collected from the beach in the vicinity of House 1, since it is possible that beach erosion dislodged them from Component I contexts. They include two retouched flakes that duplicate stone material types in the Component I assemblage and a "pillow"-shaped biface of banded chert. In addition, a specimen of black chert, well-rounded from beach rolling but exhibiting bifacial flaking technique, was found at some distance from the present shoreline. These four specimens were found out of context, and, other than on the basis of their general provenance from the point, it is not possible at present to demonstrate a closer affinity between them and materials from the Component I occupation.

Discussion. Component I probably represents a lakeside hunting encampment of some antiquity, but considering how little of it was exposed during excavation, it is difficult to say anything further about the kinds of activities that are represented. A hearth, however, appears to be present. Despite efforts to isolate more of Component I through stratigraphic analysis, the inventory remains small and undiagnostic. A flaked stone industry is clearly represented, and it is to be noted that perishable materials of both wood and bone are part of the collection. Perhaps the most important observation to be made concerning Component I, given the limited nature of the

data pertaining to it, is the manner in which these earlier materials became mixed with later deposits during historical excavations for House 1. Since I know of no method whereby materials from the two cultural levels can be differentiated with confidence, save on typological grounds, there clearly are important analytical problems that must be taken up later in the discussion of the Point Site collections.

HOUSE 1

House 1 was rectangular in plan (measuring 3 by 5 m prior to excavation) and oriented with the longer axis paralleling the beach ridges east to west (Fig. 12). It contained a central hearth, and probable structural remains were uncovered in upper levels of housepit fill. No direct or indirect evidence of in situ wall structure, such as posts or planks, were found, and their absence no doubt contributed to the difficulties in defining the extent of the house floor. An entry may be represented at the east end of the house. The house plan did not include an attached sweatbath.

Part of the central hearth was excavated. Incompletely burned logs were exposed immediately below the surface organic layers and were oriented north to south, or perpendicular to the longer axis of the house. They overlay charcoal and an extensive accumulation of compacted ash. The ash deposit was 15 cm thick and encircled by a charcoal rim which contained abundant carbonized spruce needles. The hearth was nearly 2 m in diameter, but it was not defined by any particular patterned arrangement of stone, although a concentration of

rounded cobbles and fire-cracked rock was noted along the northern perimeter of the ash accumulation. The hearth deposits contained fire-cracked rock, calcined bone, ceramic sherds and glass beads.

Various cultural levels in the housepit fill were defined during excavation, including three house "floors." The lowest level, "floor" three, I have already indicated predates construction of the house and represents the earlier component at the Point Site. The remainder of the house fill, including "floors" two and one, contained fragments of the same ceramic bowl, and I think it likely that all these deposits pertain to a single occupation of the house and post-abandonment phases in the natural deterioration and filling-in of the housepit depression.

"Floor" two likely is the former "living" floor of House 1, since it occurs at the level of the hearth. Its horizontal extent was poorly defined, and I have already indicated the problems in differentiating house and Component I deposits where the floor directly overlay the Component I organic layer. In consideration of these problems, I have not found it expedient to map refuse that may have been associated with the "living" floor or to make inferences about the kinds of activities that took place inside the house based on the distribution of these remains.

Six spruce poles, which ranged from 49 to 112 cm in length, were found in an advanced state of decay just below the surface organic layers in upper levels of the housepit fill. The six poles were evenly spaced parallel to one another and overlay a longer pole at right

angles (Fig.12). The underlying pole conformed to the surface contours of the depression just below the surface organic layers, but the ends of the six parallel poles were embedded in the gravel berm at the east end of the house. Fragmented birch(?) bark sheets were found between the poles and may have been associated in some manner with the pole structure. If the poles are indeed the remains of house structure, they evidently remained standing long after abandonment of House 1, since their stratigraphic position suggests that they collapsed into the eastern end of the house after considerable fill had accumulated in the housepit depression.

Discussion. Ethnographic and historical sources indicate considerable variation in the construction of nineteenth century Ahtna houses, and I want to explore the nature of this variation before making direct comparisons with the houses at the Paxson Lake sites. According to de Laguna and McClellan (1981:645; n.d.), the chief's house and the moss house were the major forms of the winter dwelling. The Ahtna also used double lean-tos covered with birch bark strips during the summer, and temporary habitations, constructed tipi-like of poles covered with brush or skins, provided expedient shelter during hunting trips. We need be concerned only with the chief's and the moss house in the following discussion, since it apparently was only the forms of the winter house that required any sort of below-ground construction.

The chief's house was the more substantial of the two forms of the winter dwelling. It was about 18 feet (5.5 m) square, "built of

spruce poles and slabs in a loose style....and covered in with spruce bark" (Allen 1887:130). It often included a sweatbath attached to the end of the house opposite the entry, and a low bench around the inside walls served as a seat during the day and a sleeping platform at night. The area beneath the bench was divided into compartments by vertical wooden slabs. A large hole in the roof allowed smoke from the central fire to escape from the structure, and entry into the house was through a small "storm shed," draped on the outside with an undressed sheep or goat skin (Allen 1887:130; de Laguna and McClellan 1981:645; Shinkwin 1979:33-4).

Allen (1887:Fig. 10) illustrates Chief Nicolai's house at Taral, which he said was fairly representative of the Ahtna house (Allen 1887: 130). Nicolai's house was about 6.3 m long and was a low-eaved but high-roofed structure, which incorporated substantial ridge poles into roof construction. Abercrombie (1900b:Plate 158) illustrates a smaller, but generally similar, house located on the Copper River one mile above Taral. Like Nicolai's house, it incorporates ridge poles in roof construction, and the photograph shows that horizontally laid, hewn planks were used in the construction of the walls below the eaves.

Housepit 2 at Dakah De'nin's Village provides additional details pertaining to construction of the chief's house (Shinkwin 1979:40-50). Housepit 2 was a large structure (6 by 6.4 m), and, although details of roof construction were not preserved among the remains, wall construction was substantial, incorporating upright hewn planks at either end of the house and horizontal, split logs in sidewall con-

struction. Nicolai's house and the house illustrated by Abercrombie were covered with a continuous sheathing of bark strips, and spruce bark was likely used to cover the exterior of Housepit 2 at Dakah De'nin's Village as well (Shinkwin 1979:49).

Although Allen did not distinguish between major forms of the permanent dwelling, he illustrates a second Ahtna house in his report (Allen 1887:130, opposite), which is really quite distinct from Chief Nicolai's residence in the manner of its construction. This house is smaller (about 4.3 m in length) and has an entirely different roof form, distinctive, no doubt, because the end walls do not support the substantial ridge poles used in construction of the roof of the chief's house. Instead, the roof appears to be formed by an arched configuration of slender poles, bent to meet the front and rear walls, which are about one meter high. The roof slopes up from all four walls to converge and peak at the smoke hole. The "Skeleton of an Indian Wigwam," photographed by Neal Benedict (n.d.:View No. 68) near lower Klutina Lake in 1898, perhaps represents the interior framework of this type of dwelling. Benedict's photograph shows four interior upright posts tied together at the upper ends with horizontal poles. Poles bent to meet (or leaning against) the interior framework provide structure for the walls.

The type of construction represented by Allen's illustration and Benedict's photograph does not appear to correspond with descriptions of the moss house. According to de Laguna and McClellan (n.d.; 1981: 645), the moss house was smaller than the chief's house, and it had a

shed-type roof made of poles and covered with moss and sod. The walls were built of horizontal tiers of logs lashed between pairs of upright posts. Housepit 9 at Dakah De'nin's Village is considered by Shinkwin (1979:50) to correspond to the moss house on the basis of its small size (4 by 5 m) and evidence of sod-over-bark construction of either the roof or walls. The structure and design of the roof could not be reconstructed from the remains, but, otherwise, Housepit 9 was generally similar to Housepit 2 in all other aspects of construction (Shinkwin 1979:45-7).

William Irving (1957:46n) describes yet another variation of the winter house, which is of special interest because it pertains to the Middle and Western Ahtna area:

> When Second Chief drew for me what he considered the aboriginal winter house, he indicated a shallow semi-subterranean dwelling with a central fireplace, possibly a sweat lodge at the back, but without an entrance passage. The superstructure he showed to consist of light poles bent to form a dome, over which was piled moss and dirt. It is difficult to tell whether the dwelling was oval or rectangular with round corners.

Whether the house described for Irving corresponds to a variation of the moss house or the second house illustrated by Allen is not clear, since it seems to incorporate elements of both types of construction.

I do not intend to construct an extended typology of Ahtna houses from this review of the literature, but I think that the historical evidence suggests previously unrecognized variation in house construction, which has certain implications for the archeological record.

Houses of the type represented by Allen's illustration, Benedict's photograph and possibly Irving's description suggest interior four-post construction, supporting an arched or domed wall and roof structure. In contrast to the more substantial chief's house, these dwellings were constructed of light-weight materials, such as poles and bark, and appear to be easily dismantled and, perhaps, eminently transportable. We might expect the abandoned remains of such houses to preserve evidence of interior four-post construction, but something much less substantial than the side- and end-wall construction of the chief's house.

I doubt very much that House 1 and the upper level of Feature 1 at the Knoll Site correspond to the chief's house, because of the comparatively small size of these features and because they contained neither direct nor indirect evidence for the substantial wall structure, which the historical and archeological record indicate was an integral part of this type of construction. The chief's house may have been an impractical solution to housing in the Paxson Lake area, where the materials used in this type of construction are less readily available than along the lower courses of the major river systems in the Copper River drainage.

Whether we should consider House 1 and the upper level of Feature 1 at the Knoll Site examples of the moss houses that were said to dot the shores of Paxson Lake in the late nineteenth century, however, is not certain. Other than such general features as their relatively small size, rectangular plan and shallow excavated depth, we lack

internal evidence which might suggest more precisely what type of construction is represented. House 1 on the point confirms the central position of the hearth, and the thin poles recovered in upper levels of the pit fill, if indeed remnant superstructure, are not inconsistent with the type of construction suggested for variants of the winter dwelling. Both the Knoll and Point site features indicate that an attached sweatbath was not a necessary aspect of house construction. A variant of the winter dwelling other than the chief's house appears to be represented by the Paxson Lake remains, but the present data provide few details pertaining to the nature of this type of house construction.

SITE SUMMARY

An earlier component is clearly represented at the Point Site, and it is the probable source of flaked stone materials assigned to House 1 contexts during archeological excavation at the site. A mixing of components is attributable both to historical excavations for House 1 and ineffectual vertical control during field investigations. Whether future excavations on the point can demonstrate that all of the earlier material was derived from a single, easily defined component is problematical, however, since the beach-rolled condition of many of the lithics in the Point Site collection suggests to me extensive reworking of earlier deposits at the site.

House 1 is clearly of historic age. It documents variation in what is presently known about the archeological remains of Ahtna

houses and lends support to the interpretation that Feature 1 at the Knoll Site was probably refurbished for later use as a dwelling. Neither feature contributes detailed information concerning this aspect of Ahtna construction, and we evidently must await excavation of better preserved examples in the area for a clear definition of this house type.

Although excavations were much less extensive on the point than on the knoll, artifacts from the Point Site represent a slightly larger collection. The Knoll Site artifacts, however, are more varied in terms of the types represented, as will be shown in the following description of the Paxson Lake collections. This variability undoubtedly reflects the fact that more activity areas were sampled at the Knoll Site than at the Point Site, but one also gets the impression that historical occupation of the knoll was of longer duration than occupation of House 1 on the point.

CHAPTER 5. THE PAXSON LAKE COLLECTIONS

In describing the artifacts in the Knoll Site and Point Site collections, the useful dichotomy established in the Alaska historic sites literature by James VanStone will be followed to distinguish two major categories of artifacts--imported and locally manufactured goods. The latter category includes, in addition to artifacts fashioned from locally available raw materials, imported items altered by the inhabitants to serve local needs (Oswalt and VanStone 1967:25). Under these two broad headings, artifacts are grouped according to the nature of the raw material represented, rather than by functional criteria. The only artifact class requiring extensive classificatory consideration is glass beads. Again, I borrow from the existing literature and, in the interest of standardization of description, employ a system of glass bead classification outlined by Kenneth and Martha Kidd (1970), with important modifications as suggested by Janet Spector (1976).

Many of the finished artifacts of local manufacture have counterparts in Ahtna material culture and are readily identifiable as to their function. I will draw from the ethnographic reconstructions of Frederica de Laguna and Catharine McClellan (n.d.) to make these relationships explicit whenever possible throughout the text. A notable exception is flaked material of cryptocrystalline stone, the manufacture of which is clearly beyond historical and ethnographic reconstruction (Workman 1976b:83). In describing the lithic materials of cryptocrystalline stone, I take a more technological approach and follow

analytical procedures outlined by Richard Morlan as much as possible (Morlan 1973a; 1973b:162-272).

In addition to the artifactual remains, 6261 bones and bone fragments, 99 percent of which represent caribou, were recovered from the Knoll and Point sites. David Yesner published the results of the faunal analysis in a separate report (Yesner 1980), but I will present his major conclusions in summary form later in this chapter.

THE KNOLL SITE ARTIFACTS

One hundred ninety artifacts were recovered from the Knoll Site. The majority of the remains (97 percent) are from the upper levels of Feature 1 and Cache Pit 1, Feature 2 and the midden, defined earlier as the main historical component at the site. Only five items (three percent of the total collection) are assigned to the lower levels of Feature 1 and Cache Pit 1. Glass beads account for 77 percent of the total artifact inventory, and flaked stone materials of cryptocrystalline rock, including 20 unretouched flakes, represent another eleven percent. Chipped stone is distinguished from heavy stone implements of microcrystalline stone by material type and, to a lesser extent, on typological grounds, and it is placed in a special category of stone objects.

IMPORTED GOODS

GLASS

Glass Beads. Hollow-cane (tube) beads are represented almost ex-

clusively in the Knoll Site collection, but a single wire-wound example was also recovered. Distribution of the 147 glass beads among the features at the Knoll Site is presented in Table 3, and, to facilitate later comparisons, I have classified the Knoll Site and Point Site bead collections together in Table 4.

METAL

Copper. A loosely rolled piece of sheet copper (77.15-174; Plate 3e) came from the upper level of Feature 1. It is of uniform thickness (.5 mm) and probably milled. For this reason, it is considered imported, rather than native copper. Unrolled, the narrow strip would measure approximately 5.8 by 1.6 cm. The fragment is unaltered, but the margins are slightly "lipped," indicating detachment by bending and breaking.

UNIDENTIFIED OBJECT

A tiny colored chip (77.15-91) came from the ash deposit in the upper level of Feature 1. It has a hard, reddish brown surface and is layered. The chip may represent a tiny fragment of glazed pottery, but this determination is not conclusive.

LOCALLY MANUFACTURED GOODS

METAL

Copper. A partially reconsolidated piece of sheet copper (77.15-

Table 3. Glass Bead Distribution at the Knoll Site.

Bead Variety	Catalogue Number
Feature 1, Upper Level:	
Ia(2)	89, 123*, 143, 172
IIa(1)	105, 165
IIa(4)	37, 39, 41, 43, 55, 56, 57, 58, 61, 62, 63, 64, 65, 67, 68, 69, 70, 71, 74, 76, 77
IIa(7)	107
IIa(11)	148
IIa(13)	135
IIa(16)	88
IIb(1)	29
IIIa(1)	86
IIIa(2)	163
IVa(1)	21, 23, 35, 36, 44, 45, 78, 79, 80, 81, 82, 83, 84, 85, 87, 90, 100, 101, 106, 113, 116, 117, 128, 131, 132, 133, 134, 141, 142, 155, 156, 157, 158, 159, 160, 161, 162, 164, 166, 167, 168, 169, 170, 171
IVa(2)	104, 154
IVa(3)	18
IVa(4)	22, 26, 28, 30, 31, 34, 47, 48, 49, 50, 52, 96, 97, 114, 126, 127, 130, 136, 137, 138, 139, 140, 144, 145, 146, 147, 149, 150, 151, 152, 153, 176
IVa(5)	32, 33, 46, 51

Table 3. Glass Beads Distribution at the Knoll Site--Continued.

Bead Variety	Catalogue Number
IVa(6)	27, 38, 40, 42, 53, 54, 59, 60, 66, 72, 73, 75, 98, 99, 102, 103
WI(1)	24
Feature 1, Lower Level:	
IVa(1)	124
Cache Pit 1, Upper Level:	
IIa(16)	196
Feature 2:	
IIa(1)	204, 205, 208
IVa(1)	207
Midden:	
IIa(16)	220
IVa(1)	213, 214, 215
IVa(2)	216
IVa(4)	219
IVa(5)	218

*Recovered from the "moss" layer separating the upper and lower levels.

Table 4. Classification of the Knoll and Point Site Glass Beads.

Hollow-cane Beads

The glass bead classification systems of Kidd and Kidd (1970) and Spector (1976) are related to the process of glass bead manufacture during the seventeenth through nineteenth centuries. Four major types of hollow-cane (tube) beads are recognized, based on the nature of secondary alteration of the cut tube section or whether different colors of glass were combined at beginning stages of manufacture (a process called "layering"). Basically, all hollow-cane beads are derived from long glass canes (hollow tubes) drawn out from a molten bubble of glass. Small sections were cut from the glass canes and often were tumbled in a drum of heated sand to produce a more rounded product. Following Kidd and Kidd and Spector, I have segregated the Paxson Lake collections into four major types of hollow-cane beads. Sub-types and varieties are distinguished on the basis of additional surface treatments, shape, color, degree of translucency of the glass, and size. Standard color names are from the Reinhold Color Atlas (Kornerup and Wanscher 1961).

Type I

Type I are simple monochrome, tube-shaped beads. Segregation of Type I beads sometimes became a matter of subjective judgement, especially when distinguishing Type I and Type II beads. At this level of comparison, shape is the sole criteria for classification, and problems arose in differentiating cylindrically shaped beads with obvious indications that the cut tube section had been secondarily tumbled. Elongate beads, with the same diameter along the entire length of the tube section, were classified as tube-shaped, despite the presence of margins that are slightly rounded. In this classification, the length

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

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of Type I beads tends to be several times greater than the width (diameter).

Type Ia are the simplest form of tube-shaped beads. These are monochrome beads distinguished by their cylindrical shape.

Ia(1): tube; opaque white (1A1)*
medium (4-6 mm); N = 2

White beads presented some problems in identification, especially in distinguishing the monochrome from the clear glass over white opaque varieties (Type IIIa(1) below). Differences in the intensity of whiteness were noted among the white beads, but are not differentiated in this classification.

Ia(2): tube; translucent grayish turquoise (24D5)
small (2-4 mm); N = 5

Type Ib beads are similar to the Ia varieties, except that the glass has been shaped with a marver, or paddle, to produce flattened surfaces along the length of the tube section. The identifiable examples from Paxson Lake are hexagonal in transverse cross-section.

Ib(1): hexagonal tube; clear princess blue (20C8)
large (6-8 mm); N = 2

Ib(2): marvered tube; clear green (26B7)
fragment; N = 1

Type Ic are similar to Type Ib beads with the additional treatment of grinding on the ends of the tube section to produce facets.

Ic(1): hexagonal faceted tube; translucent grayish turquoise (21B6)
large (6-8 mm); N = 1

Ic(2): faceted marvered tube; translucent gentian (blue) (21B7)
fragment; N = 1

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

	It was not possible to determine the number of sides on this marvered fragment [Ic(2)]. As the Reinhold color number suggests, the color was nearly indistinguishable from that of Ic(1).

Type II

Type II beads are differentiated from Type I beads, because secondary tumbling in a heated, sand-filled cylinder has altered the shape of the original cut tube section. Type II beads are the most common form in the Paxson Lake collections, and a wide variety of shapes are represented. I have not expended undue time in differentiating this bead type by shape, except to isolate the more nearly spherical from the barrel shapes. My impression is that the Paxson Lake Type II beads fall along a continuum from highly rounded specimens to only slightly sub-rounded derivatives of the original tube section. Length tends to be equal to or slightly less than the width (diameter) in these specimens.

Type IIa are monochrome beads that come closest to approximating the barrel shape in Spector's (1976:25) classification.

IIa(1): barrel; opaque white (1A1)
small (2-4 mm); N = 11

IIa(2): barrel; opaque white (1A1)
medium (4-6 mm); N = 4

IIa(3): barrel; opaque white (1A1)
large (6-8 mm); N = 3

IIa(4): barrel; opaque reddish brown (9E8)
small (2-4 mm); N = 21

IIa(5): barrel; clear deep red (10C8)
small (2-4 mm); N = 15

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

IIa(6): barrel; clear deep red (10C8)
large (6-8 mm); N = 1

IIa(7): barrel; translucent dark ruby (12F4)
small (2-4 mm): N = 1

IIa(8): barrel; opaque black
small (2-4 mm); N = 1

IIa(9): barrel; opaque black
medium (4-6 mm); N = 7

IIa(10): barrel; opaque black
large (6-8 mm); N = 1

IIa(11): barrel; clear Prussian blue (21F7)
small (2-4 mm); N = 1

IIa(12): barrel; translucent grayish blue (21E6)
small (2-4 mm); N = 2

IIa(13): barrel; opaque baby blue (23B3)
small (2-4 mm); N = 1

IIa(14): barrel; opaque azure blue (24A7)
small (2-4 mm); N = 27

The Type IIa(14) variety is perhaps the most fragile of the Type IIa beads, since the sample includes 17 fragments as well as 10 whole beads. I was unsuccessful in reconstructing any whole beads from the uniformly-sized halves.

IIa(15): barrel; translucent Capri blue (24B7)
small (2-4 mm); N = 2

IIa(16): barrel; translucent grayish turquoise (24E7)
small (2-4 mm); N = 3

IIa(17): barrel; translucent grayish turquoise (24E7)
medium (4-6 mm); N = 1

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

Type IIb beads are more spherical than Type IIa beads.

IIb(1): round; opaque grayish turquoise (24B6)
large (6-8 mm); N = 1

This variety is represented by a large fragment and was associated with the cremation in Cache Pit 1.

Type III

Type III beads are polychrome analogues of Type I beads. In the manufacturing process, the tube is drawn out from glass bubbles that combine two colors of glass. Problems similar to those encountered in distinguishing Type I and Type II beads were encountered in differentiating Type III and Type IV beads.

Type IIIa are elongate, cylindrical beads of two layers of glass.

IIIa(1): tube; clear glass over opaque white (1A1)
small (2-4 mm); N = 1

IIIa(2): tube; clear glass over opaque white (1A1)
medium (4-6 mm); N = 3

As mentioned earlier, these beads (and the corresponding Type IVa beads) were oftentimes difficult to distinguish from the white opaque, monochrome varieties. A few broken examples, however, clearly show an outer layer of clear (uncolored) glass over a white opaque core. This layering is often difficult to distinguish because of the optical properties of the clear glass.

Type IV

Type IV beads are derived from Type III beads, but have been secondarily tumbled. Like their Type II analogues, a continuum of shapes

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

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is discernible within this class. All of the Paxson Lake examples are two-layered beads without surface decoration, and they all approximate the barrel shape.

Type IVa beads are polychrome and sub-spherical.

IVa(1): barrel; clear glass over opaque white (1A1)
small (2-4 mm); N = 62

IVa(2): barrel; clear glass over opaque white (1A1)
medium (4-6 mm); N = 38

IVa(3): barrel; clear glass over opaque white (1A1)
large (6-8 mm); N = 5

IVa(4): barrel; opaque reddish brown (9E8) over clear to translucent pea green (29D5)
small (2-4 mm); N = 53

IVa(5): barrel; opaque reddish brown (9E8) over clear to translucent pea green (29D5)
medium (4-6 mm); N = 6

The Type IVa(4) and IVa(5) varieties are variants of the famous cornaline d'Aleppo beads, about which a great deal more will be said later. The interior glass of the Paxson Lake examples shows some variation in color and translucency, which appears to be attributable to some of the exterior glass having been drawn into the core color during manufacture. These flawed examples seem transitional between the green-lined forms and the brown-lined forms described below.

IVa(6): barrel; opaque reddish brown (9E8) over opaque dark reddish brown (9F8?)
small (2-4 mm); N = 20

IVa(7) barrel; opaque reddish brown (9E8) over opaque dark reddish brown (9F8?)
medium (4-6 mm); N = 1

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

IVa(8): barrel; clear strawberry red (10D8) over opaque white (1A1)
small (2-4 mm); N = 1

IVa(9): barrel; clear strawberry red (10D8) over opaque white (1A1)
medium (4-6 mm); N = 4

IVa(10): barrel; clear strawberry red (10D8) over opaque white (1A1)
large (6-8 mm); N = 1

Another form of the cornaline d'Aleppo beads, the IVa(8, 9 and 10) varieties are sometimes called "Hudson's Bay" beads in consideration of the close historical association with the Hudson's Bay Company.

Wire-wound Beads

Wire-wound beads are distinguished from the mass-produced tube-type beads by their individual craftsmanship. In the manufacturing process, threads of molten glass are wound around a copper or iron wire (mandrel). Air bubbles trapped within the glass tend to be round in contrast to the elongate bubbles in the tube beads, and it is often possible to observe the glass thread which had been wound around the mandrel. Only three examples of wire-wound beads are represented in the Paxson Lake collections.

WI are monochrome beads of simple shape.

WI(1): round; opaque white (1A1)
small (2-4 mm); N = 1

WI(2): round; opaque white (1A1)
medium (4-6 mm); N = 1

Table 4. Classification of the Knoll and Point Site Glass Beads--Continued.

WII beads are monochrome beads of more elaborate shape.

WII(1): faceted (three rows of facets); clear grayish yellow (1B4)
large (6-8 mm); N = 1

*Designates color code in the Reinhold Color Atlas (Kornerup and Wanscher 1961).

25; Plate 3d) was recovered from the upper level of Feature 1. The small fragment is rectangular in outline (2.76 by .56 cm) and of uniform thickness (.4 mm). One margin is lipped and creased, suggesting detachment by bending and breaking. The opposite margin preserves the outline of seams where the metal had been reconsolidated by hammering. The fragment is likely imported copper which had been reworked by the local inhabitants.

A tiny piece of worked copper (77.15-3; Plate 3c), without exact provenience but probably from the upper level of Feature 1, is reminiscent of the copper debris found at Dakah De'nin's Village (Shinkwin 1979:59, 75) and GUL 077 (Workman 1976b:67-9), which is believed to be the by-product of tool manufacture from native copper. The fragment from the Knoll Site is 1.79 by .39 by .16 cm and rough shaped. It has not been determined whether this fragment represents a reworked piece of imported or native copper.

Discussion. The three pieces of copper in the collection represent too small a sample to comprehend the significance of the use of this material at the site. It is of interest, however, that two of the three fragments appear to represent milled rather than native copper, and, therefore, they probably were obtained indirectly from the trading post. Traditionally, the Ahtna obtained copper from local sources, and the trade of this material from the Copper River is known historically throughout the nineteenth century. Use of native copper by the Ahtna is also well documented ethnographically (de Laguna and McClellan n.d.) and in the archeological record (Shinkwin 1979:51-88;

Workman 1976b:51-72), but we need not venture into a comparative discussion of the copper material, since the present data apparently offer little help in reconstructing copper technology in the Ahtna area (Workman 1976b:72). It is likely more significant that some traditional tool forms, such as the crooked knives, are fashioned at the Knoll Site out of iron rather than native copper.

Iron. Iron in the Knoll Site collection is represented by two knives. Both examples have short blades relative to the length of the tang, possess a unilateral shoulder at the juncture of the blade and the tang, are thinned unifacially to achieve the cutting edge, and, when held with the non-shouldered (backed) edge toward the viewer, curve noticeably to the left. Such knives are documented historically and ethnographically across a wide area of northwest North America and are called crooked knives.

The larger of the two examples (77.15-221; Plate 3b) was recovered from the midden. The tang (hafting element) is 5.36 cm long, rectangular in transverse cross-section and .29 cm thick. The surface of the tang is generally smooth, although gaps or grooves are evident where the metal did not become completely consolidated during manufacture. The blade element has a corroded surface and presents a somewhat ragged outline. Maximum width (1.52 cm) occurs at the shoulder, and blade length is 4.3 cm. The blade edge is best preserved near the shoulder, but unifacial thinning to achieve the cutting edge is evident along the entire lower margin and extends around

the tip of the blade end. The obverse side (non-thinned surface) of the blade is flat. The backed edge (margin opposite the cutting edge) is thick opposite the shoulder but thins toward the tip. The backed edge is straight from butt end of the tang nearly to the rounded tip. When dropped on a hard surface, the knife responds with a tempered ring.

The second crooked knife (77.15-206; Plate 3a) came from Feature 2. It it generally similar in outline to the first example, although smaller and more curved (the upper margin is concave). In addition, the blade is thickened medially, since the entire perimeter of the blade end (upper and lower margins) has been thinned unifacially to achieve the cutting edge. The surface of the tang is pitted from corrosion, and a seam is visible near the proximal end where the metal did not become completely fused during manufacture. Maximum thickness (.18 cm) occurs along the tang. The length of the blade is 2.7 cm and tang length is 3.42 cm, for a ratio of blade-to-tang length of 1:1.3. This corresponds to a ratio of blade-to-tang length of 1:1.2 for the first example.

Discussion. De Laguna and McClellan (n.d.) indicate that the crooked knife, an essential implement in every man's tool kit, was used for carving wood, bone and antler. Robert McKennan (1959:66) reports its use among neighboring Upper Tanana Indians as late as 1930, and around 1940 Froelich Rainey (n.d.) saw a "curved" knife in the tool kit of an elderly man from Mansfield Village.

Crooked knives have been recovered from nineteenth century archeo-

logical contexts attributable both to Eskimo and Indian occupations in Alaska (VanStone 1968:285-7; 1972:55; VanStone and Townsend 1970:70; Ackerman 1965:43; 1968:29). In the Copper River region, tanged iron blades of local manufacture have been recovered from Feature 77-3-4 at GUL 077 (Workman 1976b:115-6), from a house site near Gakona (Rainey 1939:360) and at Taral (VanStone 1955:122). The GUL 077 example is described as a unilaterally shouldered, stemmed and backed knife, but the blade evidently is not curved. The Taral specimen has a pronounced curve and is thinned unifacially to achieve a cutting edge. It has bilateral shoulders and is quite long (13.5 cm), but it does not differ significantly from the Paxson Lake examples in overall form. The Gakona knife is not curved and is bilaterally shouldered asymmetrically. The blade is more than three times the length of the tang. The Gakona specimen is a distinct form, which Rainey identifies as an end-bladed knife.

Crooked knives at Dakah De'nin's Village, fashioned from native copper, provide the most striking comparisons with the Paxson Lake examples. The smaller knife from Paxson Lake (77.15-206) and the smaller example from Housepit 9 at Dakah De'nin's Village (Shinkwin 1979: Fig. 10:H) are nearly identical in all respects, except the copper knife has a slightly longer blade and a straight back. A second knife from Housepit 9 (Shinkwin 1979:Fig. 12:B) is uncurved, slightly larger, but, otherwise, generally similar in form to the first example. Workman (1976b:63) segregates eight native copper implements from the GUL 077 collection, which he says recall the form of the crooked knife

and which he suggests are analogous to the crooked knives at Dakah De'nin's Village (Workman 1976b:151). I believe that the crooked knives at the Knoll Site represent continuity in the metal-working tradition seen at GUL 077 and Dakah De'nin's Village. Although only knives are represented, there is virtually no change in form from examples executed in copper. They have simply been fashioned in a new medium.

BONE AND ANTLER

A variety of bone and antler implements are represented in the Knoll Site collection, and a full range of bone tool manufacturing activities, from initial processing of the raw material to completion of finished bone implements, likely took place at the site. Yesner (1980:20-2, Table 5) has described the butchering patterns in the caribou faunal sample, and in an earlier analysis (Yesner and Bonnichsen 1979), he noted that some of the caribou metapodial shafts were intentionally splintered in a manner which suggests production of blanks for bone tool manufacture.

Barbed Points. A complete, but unfinished, bilaterally barbed bone projectile point (77.15-173; Plate 4d) was found in the upper level of Feature 1. In transverse cross-section, it is nearly diamond-shaped, but the ventral surface is flattened slightly. The longitudinal profile is slightly bi-concave. Maximum width, taken in the plane of the barbs, is .86 cm; length and maximum thickness are 11.1 and .56 cm, respectively. The tang is short (1.15 cm), tapers to a

sharp point and is cone shaped. Although badly weathered, the tang appears to be slightly shouldered. Six barbs are present along the left margin. They are spaced 1.10 cm apart and are .90 cm long. The barbs project .19 cm from the shaft, but all of the tips are broken. Two widely spaced notches for barbs are present along the right margin, which is unfinished. Incised barb lines are also evident along the dorsal and ventral surfaces of this margin. The tip of the point, which is beveled in the plane of the barbs and slightly rounded, is nearly detached from the shaft due to splintering of the bone, and this may explain why the point was discarded before it was finished.

A worked piece of antler (77.15-198; Plate 4c), also recovered from the upper level of Feature 1, evidently was intended for finish as a unilaterally barbed projectile point. The right margin is straight and was produced by a saw cut. The left margin has two notches formed by saw cuts perpendicular to the long axis of the shaft. These cuts are .18 and .25 cm deep, respectively, and the resulting projections likely were intended for finish as barbs. The tip is missing, and the base retains portions of a secondary antler tine. The dorsal surface has been smoothed by whittling and grinding, and at the base, this treatment has outlined the beginnings of a tapering tang. The ventral surface is highly weathered, and a large section of material is missing on this surface. The roughly blocked-out point is thick (.78 cm) relative to width (.34 cm at the notches), and the overall (broken) length is 13.5 cm.

Discussion. According to de Laguna and McClellan (n.d.), both

barbed and unbarbed arrowheads were made from antler and bone. Bone for arrow points was split from the smaller leg bones of either moose or caribou. An upper Copper River man told de Laguna and McClellan that bone arrows used for hunting big game animals had three paired barbs. Although unilaterally barbed points are known from GUL 077, Dakah De'nin's Village and Taral (Workman 1976b:74-7; Shinkwin 1979: 60, 75; VanStone 1955:121), the nearly finished example from the Knoll Site (77.15-173) is the first bilaterally barbed point to be reported from the Ahtna area.

Awl. The tip of a bone awl (77.15-92; Plate 4e) was screened from the ash deposit in the upper level of Feature 1. The small fragment (length = 1.7 cm) is highly polished and tapers to a sharp point. A flattened, facet-like surface occurs .60 cm above the tip, but the shaft is generally round in transverse cross-section (diameter = .25 cm).

Discussion. De Laguna and McClellan (n.d.) mention little about sewing and use of the awl specifically, although awls were said to be an important part of a woman's sewing kit. We might imagine that perforators were used for a variety of sewing tasks, including the making of birch bark baskets and trays. Awls at GUL 077 (Workman 1976b:56-62) and Dakah De'nin's Village (Shinkwin 1979:54-7, 75) are made from copper and often are bipointed. At GUL 076, awls are represented by two fragments of bone and one bipointed copper example (Clark 1974:78).

Denticulate Bone Scrapers. The end-of-the-bone scraper (77.15-109; Plate 4a) from the bone layer in the upper level of Feature 1 was fashioned from the right rear metatarsus of a mature caribou. When found in situ, it lay with the tarsus in articular position, suggesting that the joint had been left attached as a handle. A cut perpendicular to the long axis of the bone was made 2.7 cm from the epiphesial (proximal) end to the approximate mid-line of the anterior and posterior surfaces before the shaft was split longitudinally along the coronal plane. The transverse scraping edge (distal end) is beveled on the upper and lower surfaces and, although broken, retains four "teeth" formed by V-shaped cuts ranging from 5.0 to 6.5 mm in length. Width of the teeth at the base ranges from 2.0 to 3.0 mm. The sides of the scraper retain much of the anterior and posterior surfaces of the bone shaft, creating a channel which likely was functional in collecting scraped residue as the skin was being worked. Length of the scraper (metatarsus only) is 24.2 cm. Width at the denticulate end (broken) is 2.4 cm. The surfaces of the denticulate end are highly polished from use wear.

The scraper (77.15-199; Plate 4b) associated with the floor of Cache Pit 1 is also serrated, but it was made from a heavy, rectangular piece of bone. The scraper is 13.05 cm long, slightly bi-concave in transverse cross-section and has a twist along the longer axis. Both ends are beveled transversely, but the toothed end is thinner and narrower (1.95 cm wide versus 2.51 cm at the proximal end). Five teeth are present (a sixth is broken off) and are formed by V-shaped

notches that vary in length from 2.1 to 3.7 mm. The teeth are very worn and smooth to the touch. The dorsal surface has been secondarily incised with two deep, V-shaped grooves that run nearly the entire length of the scraper. The grooves are neither decorative nor functional and appear to be an attempt to salvage bone material from the worn-out scraper. Completion of the longitudinal incisions would have produced three long bone strips, perhaps suitable for projectile point manufacture.

Discussion. I have grouped both scrapers under a single category of denticulate bone scrapers, but the end-of-the-bone scraper is the more easily recognized form from the literature on Northern Athapaskan material culture. De Laguna and McClellan (n.d.) learned of the use of similar hide-working tools (the punch or flesher) among the historical Ahtna. These tools had a serrated metal blade, fashioned from a spoon when available, and were hafted to a wood or bone (moose metatarsus) handle. In former times, the scraper was made from copper, but, if copper were unavailable, the metatarsus itself was serrated and the tarsus was left attached as a handle. The serrated scraper was used for a very specific purpose in the initial stages of skin preparation--the defleshing of the meat side of the skin before tanning. De Laguna and McClellan indicate that defleshing was an arduous task requiring at least a day to be completed and that it was a task usually performed by women.

Spatulate Scraper(?). A worked long bone segment (77.15-192;

Plate 4f), found among the upper level debris of Cache Pit 1, was perhaps intended for finish as a scraper. A transverse cut, obliquely angled in relation to the long axis of the bone shaft, produced a spatulate distal end. The spatulate end was thinned to a beveled edge by whittling or grinding on both the upper and lower surfaces, and the interior surface of the shaft along the right side at the distal end was smoothed to a flat surface. The proximal end was chopped and retains a ragged outline. A longitudinal cut was sawn through the posterior surface of the bone shaft, but the intent of this alteration is not clear. The spatulate end is 4.47 cm wide, and overall length is 12.9 cm.

STONE

Implements of both microcrystalline and cryptocrystalline stone are included in the Knoll Site collection. On the basis of the stone material represented and, to some extent, the more sophisticated manipulation of the cryptocrystalline materials, I have segregated the collection into two broad categories of heavy stone and flaked stone implements. Only the boulder spall scrapers can be documented ethnographically to any extent.

Heavy Stone Implements

Boulder Spall Scrapers. Five boulder spall scrapers came from the upper level of Feature 1 and a sixth is from the upper level of Cache Pit 1. They are all large, oval-shaped flakes that retain the

cortex of the rounded beach cobbles from which they were struck (Plate 5). None of the flakes has been secondarily retouched. Metrical data for the six boulder spall scrapers from the Knoll Site are presented in Table 5.

Discussion. According to de Laguna and McClellan (n.d.), the boulder spall scraper was used to scrape skins as they were first being soaked during the tanning process. These tools were made by throwing heavy river cobbles against one another to detach a large flake, and it is said that a woman would always whistle before throwing the stone, presumably for luck in obtaining just the right cleav-

Table 5. Boulder Spall Scrapers at the Knoll Site.

Catalogue Number	Feature	Length	Width	Thickness (cm)
77.15-1	Feature 1, Upper Level	10.8	7.6	1.2
77.15-2	Feature 1, Upper Level	11.9	8.2	1.2
77.15-15	Feature 1, Upper Level	12.5	7.6	1.7
77.15-16	Feature 1, Upper Level	10.6	7.5	1.3
77.15-129	Feature 1, Upper Level	14.8	8.6	1.4
77.15-194	Cache Pit 1, Upper Level	10.2	8.1	1.3

age (Shinkwin 1979:63). Such tools are known locally as bendaasi (Kari and Buck 1975:111; de Laguna and McClellan n.d.).

Hammerstones. Numerous large water-worn cobbles were collected from different contexts at the Knoll Site, but only two examples, which exhibit relatively fresh evidence of battering on one of the ends, are identified here as hammerstones. Both came from the upper level of Cache Pit 1. A broken example (77.15-195) is thin (2.6 cm), and the battered end comes to a blunt, rounded point. It is 8.0 cm wide, and the (broken) length is 13.2 cm. The second example (77.15-191) is 14.9 by 7.0 by 4.2 cm and battered on one end only. No other alterations are evident, and both examples are of a rather nondescript microcrystalline stone.

Large Tabular Spall. A large tabular spall (77.15-175), from the upper level of Feature 1, measures 23.9 by 18.1 by ca. 2.3 cm. The cortical surface has a hollow depression, which perhaps was suitable for use as a mortar, but no signs of use-wear are evident. The margins are unretouched. The non-cortical surface is weathered slightly, indicating that the spall had been detached naturally and had not been struck from a large boulder before being carried to the site.

Flaked Stone

Unretouched Flakes. All of the chipped stone material from the Knoll Site was examined with a hand lens, and flaked stone material

not exhibiting marginal retouch was placed in a category of unretouched flakes. Twenty such flakes of three stone material types came from Feature 1. Two came from the lower level pit fill, and the remainder are from ambiguous contexts in the upper level. All of it was recovered from the screen, and the exact horizontal and vertical provenience of individual flakes is in doubt. Distribution of the unretouched flakes from Feature 1 at the Knoll Site is presented in Table 6.

Retouched Flakes. Retouched flakes are a residual category in this classification, and two specialized types of retouched flakes, a scraper and a wedge, are described under this heading. Both are of the same yellowish brown chert material, and both were found in the screen during excavation of the upper level of Feature 1.

The scraper (77.15-115) is an extensively beach-rolled or naturally occurring flake with conspicuous unifacial retouch along one of the longer margins. Due to rounded edges and flake scar junctures, there are no "landmarks" to orient this flake, but it is rectangular in outline, has generally thickened margins, and the convex working edge has steep, continuous, unifacial retouch similar to the simple unifacial scrapers defined by various observers (Morlan 1973b:208; Workman 1976b: 86). Measurements are 2.09 by 1.63 by .48 cm, and chord length of the retouched margin is 1.41 cm.

The second retouched flake (77.15-95; Plate 6a) represents a wedge (Workman 1976b:91-3; Morlan 1973b:234-38). It is trapezoidal in outline and rhombic in transverse cross-section. The working mar-

Table 6. Distribution of Unretouched Flakes from Feature 1.

Catalogue Number	Description	Provenience
Upper Level:		
77.15-19	1 flake of devitrified obsidian	Screened from the surface organic layer
77.15-20	1 flake of devitrified obsidian	Screened from the surface organic layer
77.15-93	9 flakes of devitrified obsidian	Found in screen as ash layer was removed from eastern half of upper level depression
77.15-118	1 flake of devitrified obsidian	Screened from gravel lens in the eastern berm
77.15-94	4 flakes of obsidian	Found in screen as ash layer was removed from eastern half of upper level depression
77.15-108	1 flake of obsidian	Screened from organic layer below ash layer in eastern half of upper level depression
77.15-119	1 flake of obsidian	Screened from gravel lens in eastern berm
Lower Level:		
77.15-122	1 flake of black chert	Screened from lower level pit fill
77.15-125	1 flake of devitrified obsidian	Screened from lower level pit fill

gin is parallel to the long axis and 1.27 cm long. The ventral surface along the entire length of this margin has been steeply retouched, and a few larger flake scars are present on the dorsal surface. The opposite edge is 1.73 cm long, and this margin is unifacially battered dorsally. The right side is burinated, and the left side is thick (.53 cm) and forms 90° angles with both surfaces. Long facets run parallel to the longer axis across the dorsal surface. Maximum width (1.73 cm) is along the proximal edge. Length is 1.68 cm.

THE POINT SITE ARTIFACTS

Two hundred sixty-one artifacts were recovered from the Point Site, but the collection is considerably less varied than artifactual remains from the knoll. This is due in large measure to the total absence of finished artifacts of bone and antler. Glass beads represent 64 percent of the collection, and 32 ceramic sherds, fragments of a single bowl, account for another 12 percent. Forty-four flakes and implements of cryptocrystalline stone, or 17 percent of the total inventory, came from the Point Site, and, of this total, a little less than half (45 percent) is assigned with relative confidence to Component I.

IMPORTED GOODS

CERAMICS

Ironstone. Thirty-two compact ceramic rim and body sherds, collected from all levels and the hearth of House 1, represent a single

ironstone bowl (Plate 1a). No parts of the base (and, hence, a possible hallmark) were recovered, but lower portions of some body sherds indicate a rounded footrim. The bowl was approximately 17.6 cm in diameter (inside of the rim) (Ericson and De Atley 1976), and thickness of the sherds ranges from 4.1 to 4.9 mm (mode = 4.2 mm). Both the interior and exterior of the white body are decorated with a hand-painted floral motif under a clear, smooth glaze. The exterior design repeats groups of three deep blue flowers with blue (black) stems and light green leaves. Petals of pale red flowers are also visible. A single pale red band decorates the interior rim and an exterior rim band consists of blue, pale red and blue stripes. The design is well-executed, and colors are soft and subdued.

Discussion. Ironstone wares of various types of surface decoration, and hand-painted wares in particular, are ubiquitous in Alaskan archeological sites dating from the nineteenth century. In southwest Alaska, in addition to their occurrence at Indian (Kijik) and Eskimo (Crow Village, Tikchik, Akulivikchik) sites (VanStone and Townsend 1970:77-9; Oswalt and VanStone 1967:53; VanStone 1968:289; 1970:75-7), hand-painted wares have been recovered from the Nushagak Trading Center (VanStone 1972:58) and from all levels at Kolmakovskiy Redoubt (Oswalt 1980:72). They are also present in the Korovinski collection from Atka Island in the Aleutians (Veltre 1979:449). In southeast Alaska, ironstone wares were present at the Russian Mission (Russian Bishop's House) at Sitka (Shinkwin 1977:84) and at various sites along Icy Strait and in Glacier Bay National Monument (Ackerman 1965:25-8,

43, 46; 1968:30, 93, 96). In the interior, imported ceramics of any sort are seemingly less frequent, but ironstone china is reported from Taral (VanStone 1955:123) and at Niibeeo Zhoo near Eagle (Elizabeth Andrews, personal communication). Somewhat farther afield, a single ironstone fragment was recovered from the Klo-kut Site in the northern Yukon Territory (Morlan 1973b:371).

Ironstone was originally patented in 1813 by C. J. Mason, a Staffordshire potter (Godden 1971:7), but was not produced in great quantity for export by British potteries until after 1848 (Fontana and Greenleaf 1962:92; Godden 1971:17, 20). By the early 1870s, ironstone pottery was being manufactured in the United States (Ackerman 1965:27). Because of its highly durable qualities and inexpensiveness, ironstone china was suitable for use by the United States Army in the American west after 1880 (Fontana and Greenleaf 1962:92), and, probably for similar reasons, the Hudson's Bay Company imported ironstone ware for use at its trading posts under contract with W. T. Copeland (& Sons, Ltd.) (Morlan 1973b:371).

When found, hallmarks on hand-painted ironstone wares from Alaskan sites indicate a late nineteenth century American or British manufacture (VanStone 1968:290; VanStone and Townsend 1970:78). Indeed, VanStone (1970:81) believes that the majority of the ironstone wares in southwest Alaska samples postdate 1880. The examples with hallmarks from southeast Alaska also date to the last decades of the nineteenth century (Ackerman 1965:26-7; Shinkwin 1977:84, 92). Nevertheless, hand-painted ironstone pottery has been found in limited quanti-

ty in archeological contexts that indicate a somewhat earlier date of importation. For example, Oswalt (1980:72) reports that this type of ware was found in the earliest levels (1842 to 1866) at Kolmakovskiy Redoubt, and it is believed that the single Klo-kut sherd is from a pre-1870 ware, because the "high fire colour" technique used in its manufacture was popular in Britain between 1825 and 1870 (Morlan 1973b: 371).

The smoothness of the glaze of the Paxson Lake sherds indicates that the bowl was not manufactured until after 1830 (Coysh 1970:7-8; T. Dilliplane, personal communication), and it undoubtedly postdates 1848, when the English potteries began manufacturing ironstone china for the export trade. The bowl is very dissimilar to the starker, crudely-painted wares popular in the 1880s and 1890s, and I believe that the soft colors and well-executed design indicate a slightly earlier date of manufacture (VanStone 1955:123). Indeed, of all the ironstone pottery described and illustrated from nineteenth century sites in Alaska and the Yukon (examples of some of which are available for study among the University of Alaska Museum's collections), the Paxson Lake sherds most closely resemble and, in fact, appear identical to the pre-1870 ware from Klo-kut (Morlan 1973b:Plate 22a). I believe that the Paxson Lake bowl is of early importation relative to most of the hand-painted ironstone china recovered from nineteenth century archeological contexts in Alaska, and the available evidence suggests that its immediate point of origin may have been Hudson's Bay Company sources in the Yukon River drainage.

GLASS

Glass Beads. The 166 glass beads from the site include two wire-wound examples in addition to hollow-cane types. Bead varieties from the Point Site are listed in Table 7, and descriptions of individual bead varieties are included in Table 4.

METAL

Iron. Unworked metal in the Point Site collection includes two fragments of sheet iron, probably derived from the body of tin cans. A small fragment (77.15-226; Plate 3g) measures 3.45 by 2.35 cm and is .5 mm thick. A larger fragment (77.15-366; Plate 3i), very irregular in outline because smaller pieces were detached from it by bending and breaking, measures approximately 12 by 7 cm. It is also .5 mm thick. The iron is too fragmentary to suggest what type of cans may be represented, but it can be noted that the technology involved in tin can manufacture is a nineteenth century development (Fontana and Greenleaf 1962:68-72).

LOCALLY MANUFACTURED GOODS

METAL

Iron. Two iron fragments, probably derived from sheet iron similar to the imported raw material described above, were reworked by hammering. One small fragment (77.15-309; Plate 3f), trapezoidal in outline and measuring 3.66 by 1.57 cm, was shaped to a minimal degree.

Table 7. Glass Beads from the Point Site.

Bead Variety	Catalogue Number
Ia(1)	224, 235
Ia(2)	481
Ib(1)	320, 321
Ib(2)	323
Ic(1)	322
Ic(2)	351
IIa(1)	253, 289, 300, 340, 439
IIa(2)	233, 312, 355, 415
IIa(3)	299, 331, 357
IIa(5)	261, 262, 263, 264, 265, 267, 268, 269, 270, 337, 338, 352, 370, 460
IIa(6)	318
IIa(8)	282
IIa(9)	332, 344, 371, 372, 387, 388, 581
IIa(10)	333
IIa(12)	304, 401
IIa(14)	247, 254, 255, 256, 257, 258, 259, 260, 303, 305, 306, 314, 319, 335, 336, 383, 395, 396, 397, 398, 399, 400, 417, 425, 436, 437
IIa(15)	307, 373
IIa(17)	251/252
IIIa(2)	225, 330

Table 7. Glass Beads from the Point Site--Continued.

Bead Variety	Catalogue Number
IVa(1)	228, 236, 237, 238, 241, 271, 273, 308, 407, 438, 477, 478, 480
IVa(2)	229, 232, 239, 240, 242, 285, 286, 287, 288, 290, 291, 292, 293, 294, 295, 296, 297, 298, 313, 324, 327, 328, 329, 354, 356, 367, 368, 369, 381, 382, 389, 414, 418, 443, 479
IVa(3)	234, 324, 374, 390
IVa(4)	243, 244, 245, 246, 274, 275, 276, 278, 279, 280, 281, 284, 301, 341, 380, 385, 386, 402, 406, 476
IVa(5)	277
IVa(6)	283, 325, 326, 342
IVa(7)	343
IVa(8)	272
IVa(9)	249, 250, 316, 317
IVa(10)	334
WI(2)	339
WII(1)	315/353

It is slightly thicker (.8 mm) than the imported sheet iron.

The second piece (77.15-405; Plate 3h) was more extensively worked and shaped. Seams are evident on both surfaces where the metal

was not completely consolidated by hammering, and a rounded "shoulder" is present along one of the longer margins. In outline, it is somewhat reminiscent of a tanged iron knife and may have been intended for finish as such an implement. Length is 4.63 cm, and width at the "shoulder" is 1.75 cm. Thickness varies from .6 to 1.8 mm.

BARK

Container(?). Two larger pieces of folded birch bark (both about 9 by 7 cm) and numerous small fragments (77.15-463; Plate 1b) are likely fragments of a single sewn birch bark basket or tray. Four larger fragments have perforations along one edge, and the perforations often occur in vertical pairs perpendicular to the edge of the bark sheet. The paired holes are consistently spaced .5 mm apart. I did not attempt to reconstruct the fragile fragments, and, thus, the size and shape of the object remains undetermined. Sewn birch bark objects from GUL 076 (Clark 1974:80), GUL 077 (Workman 1976b:113) and Dakah De'nin's Village (Shinkwin 1979:70, 73) are identified as baskets and trays.

STONE

Incised Stone

A rounded pebble (77.15-227), decorated on one surface with incised lines (Fig. 14; Plate 6g), represents the only incised stone object in the Point Site collection. The pebble is 3.85 by 2.73 by 1.60

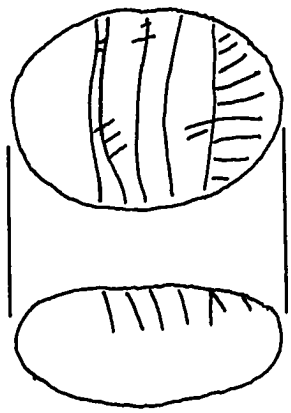

Figure 14. Incised Pebble from House 1 at the Point Site.

cm and of a relatively soft stone material. Two pairs of parallel lines are evenly spaced across the width of the stone, and short cross-hatch marks occur in several places. One end is decorated with nine closely spaced short lines that parallel the long axis. Two extend from the end nearly to the center of the pebble. The line motif is reminiscent of Northern Athapaskan decorative art generally, but what meaning the design is intended to convey and the overall significance of this incised pebble are undetermined.

Heavy Stone Implements

Boulder Spall Scrapers. The six boulder spall scrapers in the collection are similar to those described from the Knoll Site. One example (77.15-416), however, is roughly flaked dorsally to thin the

proximal end, and this modification produced a triangular outline. Margins other than the convex working edge, however, remain quite thick. It is interesting that this example probably came from the Component I level. One other boulder spall scraper (77.15-455) is also tentatively assigned to Component I. Distribution and metrical data for the boulder spall scrapers in the Point Site collection are summarized in Table 8.

Table 8. Boulder Spall Scrapers at the Point Site.

Catalogue Number	Length	Width	Thickness (cm)
House 1:			
77.15-311	9.29 (broken)	5.33	1.04
77.15-413	10.52 (broken)	6.81	2.66
77.15-429	8.5 (broken)	7.28 (broken)	1.32
77.15-430	6.84 (broken)	6.21	1.14
Component I:			
77.15-416	12.7	9.46	1.51
77.15-455	8.91 (broken)	5.60	1.25

Hammerstones. Three cobble-size stones in the Point Site collection with battered ends are classified as hammerstones. One example (77.15-410) has relatively thin margins, and battering is evident

along the sides as well as both ends. Metrical data for the three hammerstones are presented in Table 9.

Table 9. Hammerstones from House 1 at the Point Site.

Catalogue Number	Length	Width	Thickness (cm)
77.15-410	15.6	9.60	4.07
77.15-412	9.82	8.03	6.50
77.15-428	9.71 (broken)	6.55	5.04

Adze-like Implement. One heavy cobble (77.15-411), similar to the hammerstones of microcrystalline rock, is crudely retouched and battered bifacially along a fortuitous transverse edge. The angle of the transverse edge is 50°, and chord length of the working edge is 7.14 cm. Overall, the shape of this implement is something akin to the heavy splitting adzes common along the coast, but no other alterations, such as preparations for hafting, are evident. Length and width are 16.5 and 9.00 cm, respectively. Thickness is 8.73 cm.

Flaked Stone

Flaked stone of cryptocrystalline rock was sorted into ten material types, but a qualified petrologist did not examine these groupings to provide precise identification of the materials. Following

Morlan (1973b:168-9), the listing presented in Table 10 is arranged along a continuum from glassy to less tractable stone material types. As mentioned earlier, less than half of the flaked stone material in the Point Site collection is assigned to Component I on the basis of its probable stratigraphic position.

Core Fragment. One piece of basalt (77.15-7) with conchoidal flake scars over all but a cortical surface and without a recognizable platform is identified as a core fragment (Morlan 1973b:175). Some of the unretouched basalt flakes in the collection were perhaps detached from this core.

Unretouched Flakes. All of the flaked stone material from the Point Site was examined with a hand lens, and flakes not exhibiting marginal retouch were placed in a category of unretouched flakes. The distribution and material type of 28 such flakes are summarized in Table 11. None of the unretouched flakes were examined under higher powers of magnification to determine if they had "microscopic retouch," as defined by Morlan (1973b:186-94).

Retouched Flakes. Three flakes are placed in a unifacially retouched category. These flakes have thin margins, and retouch scars are short (less than 1 mm). I have not classified them by criteria other than that they exhibit retouch along at least one margin. They may correspond to the various categories of unshaped and shaped flakes defined by Morlan (1973b:184-201). All of the retouched flakes are

Table 10. Flaked Stone Material Types from the Point Site.

	Stone Types
1.	obsidian
2.	gray chalcedony
3.	yellow jasper
4.	red jasper
5.	banded chert
6.	gray chert
7.	reddish brown chert
8.	green siltstone
9.	?
10.	basalt

Table 11. Unretouched Flakes from the Point Site.

Stone Type	Catalogue Number
Component I:	
red jasper (4)	409, 453, 454, 458
green siltstone (8)	375, 378, 421, 422, 424, 442, 444, 445, 446, 447, 448, 449, 450, 451, 452, 456
basalt (10)	423, 457
House 1:	
gray chalcedony (2)	427
basalt (10)	8, 9, 10, 403, 432, 434, 435, 440

assigned to Component I and are described further in Table 12.

Scrapers. A large, cortical flake (77.15-431), with ventral retouch continuous along the left margin, represents a simple unifacial scraper (Morlan 1973b:208; Workman 1976b:86). A few irregular flake scars are also present along the dorsal surface of the same margin, but they are discontinuous and likely do not represent an attempt at bifacial thinning. The ventral retouch scars are long (about 3 mm) and form less than a 45° angle with the edge.

I also classify as a scraper a small burinated example out of obsidian (77.15-426; Plate 6b). The distal left margin has a thick burin facet without obvious platform preparation, and the distal right margin has steep dorsal retouch, like that of simple end and side scrapers (Workman 1976b:86; Morlan 1973b:208). Flake scars along the retouched margin are steep (greater than 45°) and continuous. The dorsal and ventral surfaces are somewhat roughened by tiny positive bulbs of percussion, and perhaps this scraper was hafted. Metrical, non-metrical and distributional data for the two scrapers in the Point Site collection are included in Table 13.

Burinated Flakes. Flakes with one or more burin facets, generally parallel to the longitudinal axis, are classified in a single category of burinated flakes. All of the flakes in this category also exhibit some degree of marginal retouch. A large, "beach-rolled" example (77.15-459) with a single burin facet on the distal/left margin

Table 12. Retouched and Burinated Flakes from the Point Site.

Catalogue Number	Stone Type	Length (cm)	Width (cm)	Thickness (cm)	Margin of Modification*				Comments
					Prox.	Right	Left	Distal	
Component I:									
77.15-376	(3)	1.00	1.21	.21	--	d	d & v	v	triangular shape
77.15-419	(6)	1.96	1.64	.42	d	--	--	--	short, steep retouch
77.15-420	(8)	3.69	3.59	.39	(B?)	--	d	--	beach rolled
77.15-377	(7)	1.58	.92	.18	v	B	B	v	
77.15-459	(9)	4.93	5.47	.48	sn & v	dis:v prox: d & v	dis:B prox: d & v		extensive beach rolling
House 1:									
77.15-6	(6)	3.52	3.25	.88	--	B & d	sn	d	rectangular shape
77.15-310	(3)	1.49	1.20	.19	sn	d	B	sn	rectangular shape
77.15-441	(5)	2.00	2.00	.28	B?	B?	d & v	d	beach rolled; steep retouch

*d = dorsal; v = ventral; B = burinated; sn = snap; dis = distal; prox = proximal.

is unique in that it has bifacial retouch along all but the proximal and burinated margins. The distal end converges to a point, but the margins adjacent to the burin facet are too weathered from beach rolling to detect any indications of wear. Metrical and non-metrical data for the burinated flakes in the collection are summarized in Table 12.

Burin. A retouched flake, burinated transversely (perpendicular to the longitudinal axis), represents a burin (77.15-433). Burination is from a crushed area along the left margin. The right margin preserves a jagged spur, which is noticeably worn at the tip. Dorsal retouch along the right margin shaped the projecting spur. The left margin is retouched ventrally. Metrical and non-metrical data for the burin appear in Table 13.

Wedge(?). A thick flake (77.15-408; Plate 6f), which has been burinated transversely from a nicked area along the left margin, is tentatively identified as a wedge. The right margin has short, steep ventral retouch. The left margin is similarly retouched and, in addition, has discontinuous flake scars along the dorsal surface. This specimen has been beach rolled, and the character of the margins is somewhat obscured from weathering. Metrical data are included in Table 13.

Table 13. Scrapers, Burin and Wedge from the Point Site.

Catalogue Number	Stone Type	Length (cm)	Width (cm)	Thickness (cm)	Margin of Modification*				Comments
					Prox.	Right	Left	Distal	
Component I:									
77.15-408 (wedge(?))	(7)	2.48	3.18	.99	d	v ch.L: 1.91	v & d ch.L: 2.31	B	beach rolled
House 1:									
77.15-431 (scraper)	(10)	6.75	4.31	1.14	--	--	v ch.L: 1.16	--	cortical flake
77.15-426 (scraper)	(1)	1.52	1.60	.48	--	d ch.L: 1.16	B	B	steep retouch
77.15-433 (burin)	(2)	1.80	2.72	.38	--	d	v	B	length of burin facet = 2.66 cm

*d = dorsal; v = ventral; B = burinated; ch.L = chord length of modified margin (cm).

INCIDENTAL SURFACE COLLECTIONS

In addition to the artifacts recovered during excavation of the Knoll and Point sites, several items were collected from the surface in the immediate vicinity. Most of this material was found on the gravel beach south and east of House 1 at the Point Site. The lithics described here are of particular interest, because they include finished bifaces of cryptocrystalline rock, a category of flaked stone implements not represented in either the Knoll or Point site collection.

Cartridge Case. A modern, center-fire brass cartridge case (77.15-472) came from the beach just west of House 1. "R-P" and "30-06 SPRG" are stamped around the circumference of the rim.

Ceramic Sherd(?). A translucent, vitreous chip (77.15-470), light gray in color, was collected 10 m north of Feature 2 at the Knoll Site. It has conchoidal fracture scars and perhaps is from the handle of a cup or mug. Further identification was not possible.

Retouched Flakes. Two retouched flakes from the gravel beach east of House 1 at the Point Site duplicate stone material types in the Point Site collection. The first example (77.15-471) is of green siltstone and has been extensively beach rolled. It likely was retouched dorsally along both the left and right margins. Measurements

are 3.10, 2.27 and .33 cm.

The second retouched flake (77.15-474) is of reddish brown chert and has short, steep dorsal retouch along both the right and left margins. The distal end is snapped. It measures 2.69 by 3.04 by .62 cm and is slightly water-worn.

Finished Bifaces. A finished biface of black chert (77.15-475), so rounded from beach rolling that the junctures of the flake scars are all but obliterated, was found on the beach ridge immediately south of House 1. It is quite thick (.84 cm) relative to width (1.44 cm), and the tip tapers to a somewhat conical point. The margins contract toward the base, which is flat and thick (.58 cm). Length is 6.29 cm. This specimen may represent a drill rather than a projectile point.

A unique finished biface of banded gray chert (77.15-473; Plate 6c) also came from the beach near House 1. It has four sides, and all of the margins are carefully retouched bifacially. The right and left margins are concave, but the proximal and distal ends are perhaps more accurately described as notched, rather than simply as concave. The lateral margins are thinned by detachment of long, lamellar flakes generally perpendicular to the edge. The margins at the apices of both notches are much thicker, and the edges in these areas have been smoothed either by use wear or light grinding. They contrast markedly with the sharp lateral edges. Length and thickness are 3.42 and .74 cm, respectively. Width at the flaring end is 2.58 cm, and distal

width is 1.67 cm. Because of the marked flaring toward the base, this is likely not a retouched broken point. Its shape is somewhat like the "pillows" and "four-pronged" bifaces from the western and Arctic coasts of Alaska (Giddings 1956; 1964:239, Plate 72:114).

KNOLL AND POINT SITE COMPARISONS

FAUNAL REMAINS

The faunal collection from Paxson Lake is an impressive sample by the standards of Copper River and interior archeology. Caribou remains constitute 99 percent of the 6261 bones and bone fragments in the total sample from both sites. Fewer bones were recovered from the point than the knoll, and the minimum number of individual caribou from the Point Site, nine, compares with 103 from the Knoll Site (Yesner 1980:Table 4). Other than the size of the respective samples, major differences between the faunal remains recovered from the two sites are most apparent in the non-caribou species that are represented.

The "bone layer" from the upper level of Feature 1 at the Knoll Site contained a minimum number of 24 individual caribou. Both primary and secondary butchering patterns are evident in the sample, and the remains of muskrat and a possible dog are included in the inventory from this level (Yesner 1980:Table 2). Yesner's (1980:19) conclusion that this "layer is best interpreted as general refuse from both primary and secondary [butchering] discard..." supports the interpretation that the "bone layer" represents refuse thrown into the revege-

tated cache pit depression prior to enlargement of Feature 1 and not the cached contents of a former storage facility. Perhaps these remains represent a single season's caribou kill and additional refuse that accumulated during an extended period of occupation of the Knoll Site.

Taken as a whole, the faunal remains overwhelmingly imply that initial butchering of caribou took place at both sites. This is indicated by the representation of nearly complete caribou skeletons in the samples, a low ratio of minimum number of individual caribou to the large number of caribou bones in the collections and comparison of the butchering patterns in the bone samples with ethnographic descriptions of the processing of these animals by Nunamiut Eskimos and several neighboring Northern Athapaskan groups (Yesner 1980:17, 20-1). Data pertaining to the distribution of these remains, however, are too fragmentary to determine presumed loci of caribou butchering activities at either site.

Yesner's analysis also indicates systematic reduction of certain caribou long bones (tibiae, humeri and femora), probably for marrow extraction, and fragmentation of virtually all caribou metapodials in the collections by longitudinal fracture. The latter pattern Yesner interprets as a conscious effort toward shaft splinter tool production (Yesner 1980:21-2; Yesner and Bonnichsen 1979). Other practices suggested by the patterns of butchering marks in the caribou bone sample include roasting of hooves as a delicacy, the removal of the tongue for consumption and deliberate efforts to remove skins from the cari-

bou carcasses in one piece (Yesner 1980:21).

Discolored, charred and calcined bones in the collections suggest something about former cooking practices (Yesner 1980:22). Caribou long bones, especially distal tibiae and radii, were often charred, and, since the shafts were often fragmented, Yesner suggests that a strong relationship may exist between roasting and bone-breaking activities. It is uncertain, however, what percentage of this sample may include bones charred by the overlying hearth in the upper level of Feature 1. Discolored and calcined bones in the collection suggest boiling of meat sections and the production of bone soup or grease.

Important differences are evident in non-caribou species represented in the Knoll and Point site collections (Yesner 1980:Tables 2 and 3). In addition to lemming, fish, porcupine, ground squirrel and other unidentifiable small mammals, the remains of muskrat, beaver, wolverine and wolf are represented in historic component levels at the Knoll Site. In contrast, only mink, other unidentified small mammals and domestic dog came from House 1 at the point. The fur bearers in particular are of interest, since they indicate that trapping was an additional activity pursued by inhabitants of both sites. The presence of wolf, which ethnographic sources indicate was not killed by the Ahtna traditionally, and beaver, the remains of which were returned ceremoniously to the water under aboriginal rules of conduct, suggests erosion of traditional attitudes toward the animal world in response to the rise of the fur trade (de Laguna 1969/70).

All of the large fur bearers mentioned (muskrat, beaver, wolver-

ine, wolf and mink), and tanned caribou skins as well, were of economic importance to Ahtna participants in the fur trade during the nineteenth century. The preponderance of mink at the Point Site is interesting, but I would hesitate to attach temporal significance to the differences in the fur-bearing species represented in the two collections (Yesner 1980:20), considering our rather limited understanding of the economic history of the fur trade in Alaska at the present time. Since trapping likely took place away from the sites, we should expect fur-bearing species to be under-represented (perhaps significantly) in the faunal collections, but evidence for trapping is nevertheless significant because it suggests that the inhabitants procured peltry as an ancillary activity while living at Paxson Lake and because of what it suggests about the season during which the Knoll and Point sites were occupied. Generally speaking, however, we presently lack extensive comparative material from the Ahtna area from which it might be possible to conclude to what extent the Paxson Lake faunal sample indicates commitment to a fur trade economy.

SEASONALITY

Various lines of evidence converge in suggesting that historic component levels represent spring occupations of both the Knoll and Point sites. Yesner's analysis of 25 caribou dentitions shows clusterings in the 10-to-15 and 22-to-27 month age groups, with no individuals represented in the age group 2-to-10 months. Antlers in the samples are small and intact (not shed), typical of caribou during

spring and early summer, and Yesner concludes that the caribou were hunted primarily during the spring migration period, with a few isolated individuals taken during other times of the year (Yesner 1980: 22). This determination is consistent with documented patterns of movement of the Nelchina caribou herd, since cows and calves are enroute to the calving grounds in the Talkeetna Mountains from early April to mid-May, while young adult and older males linger on the winter range through late spring and disperse during the early summer months. Representation of fur-bearing species in the faunal samples also suggests a spring occupation, since historical and ethnographic sources indicate trapping was an activity undertaken in late winter and early spring when pelts are in their prime.

It is appropriate that we should find people waiting at Paxson Lake to intercept the annual spring migration at a time of the year remembered traditionally as often one of scarcity, and the present data provide compelling evidence that caribou hunting was one alternative available to people after they had dispersed from their winter settlements in late winter or early spring. We might imagine that the inhabitants departed Paxson Lake in late spring, setting out down-river to dispose of the season's fur catch and to rendezvous at important fishing stations along the Copper River before the return of salmon in early summer. A spring occupation, therefore, is entirely consistent with the generalized annual cycle and subsistence-settlement patterns reconstructed for the upper Copper River region during the late nineteenth century.

If recent studies of the distribution of the Nelchina caribou herd may serve as a guide, the presence of caribou at Paxson Lake was not always a predictable occurrence, however. Studies of the herd's modern distribution indicate that Paxson Lake is somewhat marginal as a place to intercept annual spring migrations, and the archeological evidence pertaining to seasonality supports contemporary demographic data in suggesting that caribou exploitation at Paxson Lake was practical only during periods of herd growth and expanded use of the herd's winter range. The herd's use of winter range in the vicinity of Paxson Lake in recent years and recent spring migrations south of the lake from the Wrangell Mountains are related to the period of herd growth during the 1960s, but, in the 1940s and early 1950s, a period when population size was low, the herd's winter distribution was restricted to southern portions of the Lake Louise Plateau and the adjacent Talkeetna foothills. Clearly, fluctuations in herd size have had direct implications for the distribution of the Nelchina caribou herd throughout its maximum winter range, and to the extent that such fluctuations occurred in the past, I think it reasonable to propose that past settlement and abandonment of Paxson Lake was probably directly related to long-term oscillations in the size of the Nelchina caribou herd and concomitant expansion and contraction in the herd's use of its winter range.

ARTIFACTUAL REMAINS

Lithics of cryptocrystalline stone represent a small collection

in the Knoll Site artifact inventory, and their distribution was limited to the upper and lower levels of Feature 1. The context of recovery of all this material was ambiguous, and I indicated earlier that it probably represents an earlier component at the site. Although some of the flaked stone material may have been found in its original stratigraphic position and not recognized as such during archeological excavations, the remainder was recovered from secondary contexts, such as pit spoil and pit fill, and likely was derived from an earlier component when later inhabitants of the knoll dug their cache pit and house foundation at the Feature 1 locality.

This reasonably accounts for the presence of flaked stone of cryptocrystalline rock in the upper level of Feature 1, which otherwise is out of place in the historic component assemblage. As Workman (1976c:83) has noted, the "flaking of cryptocrystalline stone had been largely phased out by the time of the coming of the Europeans" throughout interior Alaska, and in the Copper River region, the available archeological evidence confirms this trend. Flaked stone, well represented in late prehistoric collections such as GUL 077 (Workman 1976c:15-28), is conspicuously absent in collections from early to late nineteenth century sites in the area, including Dakah De'nin's Village and Taral (Workman 1976c:9-15).

Lithics at the Point Site are slightly better represented, and stratigraphic analysis more clearly identified an earlier component below House 1. Historical excavations for the house appear to have disturbed the earlier component at the point, however, and a mixing

of levels has also been attributed to ineffectual vertical control during field investigations. As a result, I believe that the flaked stone material assigned to House 1, with the notable exception of most of the boulder spall scrapers, probably belongs to the earlier component as well.

Considering the small samples represented and the problems associated with their recovery, it is difficult to say what the earlier components at the knoll and the point represent with certainty. The wedges, unifacial scrapers and burin, as well as the clear representation of a flaked stone industry in general, perhaps belong to the late prehistoric period as defined by Workman (1976c), but we lack diagnostic materials of native copper and worked bone in the present collections to have a high level of confidence in such a designation. In addition, the finished bifaces found on the beach in the immediate vicinity of House 1 hint that a former occupation of somewhat greater antiquity may be present somewhere on the point.

The bone scraper from the floor of Cache Pit 1 is the only artifact clearly associated with the occupation represented by the lower levels of Feature 1 and Cache Pit 1 at the Knoll Site and contributes little additional information concerning the use of the knoll at this time. The caches at the Knoll Site are clearly <u>not</u> associated with the main occupation of the site and represent a more ephemeral use of the knoll at a slightly earlier date. Presumably, below-ground storage facilities of the type represented by the lower level of Feature 1 and Cache Pit 1 had been replaced in the Ahtna area by above-ground

log structures at least by the last quarter of the nineteenth century. Allen (1887:Fig. 8) illustrates an elevated log cache from the lower Copper River in 1885, and, with the possible exception of VAL 146, large, below-ground caches are not described in association with Ahtna sites considered to be of historical age in the area (Workman 1976c:9-13).

The majority of the remains in both collections clearly pertain to historic occupation of the knoll and the point. The historic component at the Knoll Site includes 168 artifacts (or 88 percent of the total artifact inventory) when materials of flaked stone are subtracted from the total, and 212+ artifacts, excluding lithics of cryptocrystalline stone, are assigned to House 1 at the Point Site (81 percent of the total collection). As mentioned earlier, the House 1 inventory is much less varied than the artifacts from the historic component at the knoll, especially when one considers that the Point Site glass bead collection is larger and that the fragments of the single ceramic bowl were entered in the catalogue separately.

Archeological sampling of activity areas at the Knoll Site was more extensive than at the point, but disparities in the classes of artifacts represented in the two collections, particularly the absence of worked bone from House 1, may be attributable to longer occupation of the knoll or differences in the respective dates of occupation. Generally, however, the sample sizes are too small to speak meaningfully of discontinuities among artifact classes in the collections, and I am very disinclined to think that there is a sharp break

between the sites--culturally, temporally or in terms of the kinds of activities that took place there.

As a whole, artifacts of local manufacture indicate that the initial processing of caribou was an important activity that took place at both sites. Tools associated with the tanning of skins are represented importantly in the Knoll Site collection in particular, and the defleshing of hides and the actual soaking of skins during the tanning process are activities implied by the presence of serrated bone and boulder spall scrapers in the collections. Moreover, since these are activities that were traditionally performed by women, it is reasonable to infer that family groups lived and worked at the Paxson Lake sites.

The manufacture of skin clothing may well have taken place at Paxson Lake, but sewing is represented only by the single broken awl screened from the charcoal and ash deposit in the upper level of Feature 1 at the Knoll Site. Glass beads, while they are known to have been sewn to clothing by nineteenth century Ahtna, in and of themselves do not necessarily imply that clothing fabrication took place at the sites (Yesner 1980:22). Their occurrence likely can be attributed to loss and at least one instance of probable interment with a burial. In addition, glass bead concentrations in charcoal and ash deposits at both sites suggest either deliberate consignment of these items of personal adornment to the hearths, perhaps at the time when the inhabitants abandoned the houses, or carelessness when working or eating around the central fire. We presently lack distri-

butional data that might associate glass beads with presumed loci of skin sewing activities at either site, and I think the artifactual remains argue more forcefully for the initial processing of caribou skins, if not the fabrication of tanned skins into finished articles of clothing.

Surprisingly, hunting is represented only marginally in the historic level collections by two incomplete bone and antler points from Feature 1 at the Knoll Site. Evidence for a firearms complex is conspicuously absent, and also missing are metal axes (or hatchets), saws and abraders. Use of the latter tools is implied by cut marks on bone and wood and the techniques of bone tool manufacture described for the Knoll Site collection. We also lack knives suitable for skinning and butchering.

Direct evidence for sweat bathing and storage activities is also absent among the historic levels data. Presumably, elevated caches had replaced the below-ground facilities of an earlier era by the time of historic occupation of the knoll and the point, and, since the houses lack attached sweat bath structures, we might expect that sweat bathing took place in separate facilities especially constructed for such purposes. Surpluses may have been removed from the sites, but it is also possible that the absence of data pertaining to caches can be attributed to sampling error, particularly at the Point Site, where only the interior of House 1 was investigated to any extent. We might expect sweat baths to be represented in the archeological record by few, if any, surficial remains, judging from historic (Benedict n.d.:

View 69, "Skeleton of Indian Sweat Tent") and ethnographic (de Laguna and McClellan n.d.) sources, and we cannot rule out sampling error for the unexpected absence of direct evidence for sweat bathing among the present data.

There are differences between the historic levels at the Knoll Site and the Point Site in the kinds of imported goods in the respective inventories. The Point Site collection adds ceramics, and it is also likely significant that imported copper was recovered from the knoll but not from House 1 at the point. For comparative purposes, however, meaningful differences are most apparent in the glass beads, since there are important discontinuities in the distribution of various bead types in the two collections. The Knoll Site beads are less varied in the types and varieties represented (Tables 2 and 6) and include, for example, only green- and brown-lined red forms of cornaline d'Aleppo. The Point Site collection adds white-lined red cornaline d'Aleppo, and since it is generally believed that the appearance of the white-lined red forms has diagnostic significance for dating purposes in Alaska, it seemed reasonable at the outset that differences in the glass beads in the two collections held some potential for dating the historic levels at the Paxson Lake sites. I think, in fact, that the beads indicate that House 1 at the point was occupied at a slightly later date than historic occupation of the knoll, but since the interpretive potential of glass beads has not been explored extensively in the Alaska historic sites literature, the chronological significance of the glass beads from the two sites will have to be devel-

oped more fully in a separate chapter.

CHAPTER 6. DATING PAXSON LAKE

Throughout the discussion thus far, I have referred to the historic occupations of the Knoll and Point sites as nineteenth century settlement of Paxson Lake. In this chapter, I will attempt to anchor these occupations more securely in the last century. An exhaustive review of nineteenth century sources pertaining to the Copper River area failed to find references to Ahtna settlement of Paxson Lake prior to 1899 (Powell 1900:804), and, earlier, I summarized the important, if temporally vague, information about this topic from local sources. Clearly, we must rely upon internal evidence for dating Paxson Lake, and I will now review the data categories that suggest something about the time placement of the historic occupations of the Paxson Lake sites during the nineteenth century.

METAL-WORKING TECHNOLOGY

The preponderance of imported metal in the collections indicates a nineteenth century occupation of the Paxson Lake sites. Previously, I suggested that the crooked knives in the Knoll Site collection represented continuity in the metal-working tradition seen at GUL 077 and Dakah De'nin's Village and that iron simply had replaced native copper in the manufacture of certain tool forms--crooked knives, specifically. Although Shinkwin (1979:77) notes that the inhabitants of the lower Copper River were already familiar with the working of iron (as indicated by the bipointed iron awls from Level 2, Housepit 2 at

Dakah De'nin's Village), artifacts fashioned from native copper dominate the Dakah De'nin's Village collection, and it is clear that trade with Europeans had had no great impact upon Ahtna material culture by the first quarter of the nineteenth century (Shinkwin 1979:164). In addition to the crooked knives, there are unmistakable analogues in native copper for the iron awls elsewhere in the Dakah De'nin's Village collection and at GUL 077, and, from ethnographic sources, it appears likely that iron had replaced copper in the manufacture of barbed points during the nineteenth century as well (Shinkwin 1979:25).

Although we must be alert to the possibility of variation in the availability of native copper throughout the Ahtna area and, perhaps, to wider access to imported metal at an early date through the common denominator of the fur trade, the evidence from Dakah De'nin's Village indicates that imported iron for local manufactures had not become widely available on the Copper River until somewhat later in the century. In this regard, F. P. von Wrangell (1970:5), writing in the early 1830s, tells us:

> Among all these people [of the north gulf coast], the territory of the Mednovskiiy was known (until the arrival of Europeans) for the copper found there; the natives hammered from this metal hatchets, knives and breastplates for themselves and to sell to the Ugalentsy, Kolosh and other peoples. Nowadays they have become the only blacksmiths who know how to forge iron which they obtain from the Russians....

I think that the historical and archeological evidence is reasonably consistent in suggesting that imported iron had not become widely available to the Ahtna until after the first quarter of the nineteenth

century. More specifically, I think the iron knives in the Knoll Site collection indicate that the Knoll Site occupation is probably post-Dakah De'nin's Village in age.

CREMATION BURIALS

Because the Russian Orthodox Church never established a mission on the Copper River (Smith 1980), we know very little about the spread of Christianity and Christian influences among the Ahtna during the late nineteenth century. Kostlivtsov lists 18 Copper River people among Christian converts in Russian America in 1860 (Tikhmenev 1978: 384), but P. N. Golovin (1979:54) reported that the church hierarchy in Sitka considered the Copper River region an open field for missionary activity at this time. During the 1880s and 1890s, Orthodox missionaries from Kenai made extensive contacts with Ahtna who were visitors at Knik and in the Knik villages (ACCRC:Box 24, Folders 305 and 306; Townsend 1974). The report by Dean Priest Vladimir Donskoi in 1895 (Townsend 1974:16-7), however, states that "because of the infrequency of the priest's visits [the Copper River Indians] remained in complete ignorance."

Lt. Allen observed few Orthodox practices on the Copper River in 1885, but he does state that the "dead are put under the ground and the site marked by a square frame, about 3 by 5 in plan, placed above" (Allen 1887:136). This suggests that Christian concepts about the treatment of the dead, if not the full teachings of the Orthodox Church, had made considerable inroads among the Ahtna by the last

quarter of the century. Since there is so much about Ahtna burial practices that is reminiscent of the modified Orthodox burials among the Tanaina, we might look to Cook Inlet as the immediate point of origin of these ideas, but my guess would be that they had not gained popularity in the Ahtna area until sometime during the third quarter of the nineteenth century and certainly not before 1850. The Knoll Site burial, then, suggests that the site was occupied when traditional concepts about the treatment of the dead were still very much in sway.

GLASS BEADS

Considering the sample sizes represented and the discontinuities in the distribution of various bead types in the Knoll Site and Point Site collections, glass beads have the most potential among the data categories examined for dating the respective historical occupations at Paxson Lake. Since glass beads have been considered of only limited utility for dating historic sites in Alaska, the following discussion must incorporate a somewhat lengthy comparative review of the literature pertaining to the distribution of glass beads in the area during the nineteenth century. Also presented for comparative analysis are previously unexamined data from archival sources concerning the importation of glass beads by American traders during the late nineteenth century.

Of all the bead types known to occur in historic sites in Alaska, the varieties of the cornaline d'Aleppo are often singled out as having the best potential for dating purposes, because it is generally

believed that the green- (and brown-) lined red forms are chronologically prior to the white-lined reds (Orchard 1929:87; Woodward 1965: 19-20). According to Woodward (1965:20), "the ones with the opaque interiors and translucent exteriors fall more in the 19th century while the other style is found in greater proportions on the 17th and 18th century sites, although it lingered on into the 19th century in certain areas." While Woodward's observations appear to have general confirmation in the Northern Plains (Davis 1972:25-6), James VanStone believes that "both forms were introduced into Alaska after extensive use elsewhere [in North America]. Unfortunately, the exact time of introduction cannot, at present, be determined" (VanStone 1968:295; Oswalt and VanStone 1967:60; VanStone and Townsend 1970:97).

In particular, VanStone has been unable to isolate the appearance of the white-lined red forms, presumably because of the extended periods of occupation of the sites he has examined in southwest Alaska. It seems reasonable, based on the age of the southwest Alaskan sites in which both forms of the cornaline d'Aleppo beads occur (Kijik--ca. 1800-1906; Crow Village--ca. 1800-1900; Tikchik--ca. 1800-1900; Akulivikchik--ca. 1800-1900), to accept the modest conclusion that the appearance of the white-lined forms is a nineteenth century phenomenon in Alaska. It might be presumed that the white-lined red forms occur relatively late, certainly after the first quarter of the last century.

Elsewhere in southwest Alaska, bead assemblages from Chirikof Island south of Kodiak (Workman 1969) and the Korovinski Site on Atka Island in the Aleutians (Veltre 1979) indicate that the green-lined

red forms were imported to Alaska relatively early in the nineteenth century. From Chirikof Island, which was abandoned at the time of American purchase of Alaska in 1867, Workman (1969:200-12) collected 3464 glass beads:

> ....I think we can refer all or most of the Chirikof specimens to Russian times with the majority perhaps dating to the first fifty or sixty years of the 19th century.... Historical accident thus seems to have dictated that in the Chirikof beads we have one of the largest and purest assemblages of Russian trade beads known as yet in northwestern North America (Workman 1969:211).

Veltre (1979:441-4) describes 625 glass beads from Korovinski. This collection differs from the Chirikof beads in the relatively fewer types represented and especially in the occurrence of the large white and pale blue wire-wound examples--perhaps the "Cook type" beads of de Laguna (1956:60-5).

The Korovinski collection includes eleven green-lined red cornaline d'Aleppo, but no white-lined red forms; Chirikof includes 45 green-lined reds and a single white-lined red example, which Workman suggests originated from the interior. Korovinski was largely abandoned by 1872 (Veltre 1979:331), and the beads recovered from the site are also likely exclusively of Russian importation. I think that Korovinski supports Workman's (1969:204) interpretation that the green-lined red form of the cornaline d'Aleppo is "a marker of Russian contact in this area."

Cadzow Lake, the multi-component Kutchin camp on the Porcupine River in northern Yukon Territory (Morlan 1972), is cited by several

authors as documenting the later appearance of the white-lined red forms of cornaline d'Aleppo on the basis of the stratigraphy. Layers 1, 2 and 3 all contained trade beads, but only layers 2 and 3 need concern us here, since it has been suggested that they bracket the time of the appearance of the white-lined red form of cornaline d'Aleppo in the area. Morlan (1972:72-3) suggests 1850 as the occupation date of Layer 3, which yielded a small sample of 16 beads, including one white opaque, nine green-lined red and six brown-lined red types. Layer 2, dated to about 1880, contained 87 beads, representing 15 types. Five examples of the white-lined red and 13 green- and brown-lined red varieties of cornaline d'Aleppo are included in the Layer 2 assemblage.

Morlan (1972:70) suggested 1850 for the occupation of Layer 3, because he believed the green-lined and brown-lined red cornaline beads to have been restricted to the Hudson's Bay Company trade. Since it is now known that the Russian-American Company also imported the green- and brown-lined forms into southern Alaska, and probably the Yukon River drainage as well, we should perhaps entertain the equally attractive possibility that the Layer 3 assemblage of imported goods from Cadzow Lake was obtained indirectly from Russian sources. Although this immediately suggests that the imported goods antedate Morlan's suggested age for Layer 3 by a decade or more, the approximate date of 1850 remains acceptable, since, on Alexander Murray's authority (Murray 1910:29, 45, 70-1), Russian trade goods were widespread in the lower Porcupine River region as late as 1847 and, presumably, were not entirely displaced by Hudson's Bay Company imports

until several years later.

In the lower Copper River area, Shinkwin (1979:85) notes that the white-lined red form of cornaline d'Aleppo appears in the bead assemblage from the late nineteenth century site of Taral, but does not occur in the houses at Dakah De'nin's Village. Considering the probable date of occupation of Dakah De'nin's Village during the first and early second quarters of the century, its proximity to Russian sources of trade goods, and the fact that, with the possible exception of a small, clear, Capri blue specimen, all of the 72 beads from the site have reasonable counterparts in the Chirikof and Korovinski collections, I think it certain that the glass beads are exclusively of Russian importation.

Taral was occupied for a much longer period--at least from 1847 on the basis of the historical evidence (Sokolov n.d.; Doroshin n.d.)--but part of the imported goods in the collection definitely date from the late nineteenth century (VanStone 1955:123). Since Taral was not abandoned until after 1900 (VanStone 1955:119), I think it reasonable to assume that at least part of the beads in the collection are of American importation. Comparison of the glass beads from Taral with those from Dakah De'nin's Village, in any case, confirms the later appearance of the white-lined red forms of the cornaline d'Aleppo in the Copper River area (Shinkwin 1979:85).

In sum, the archeological evidence which has accumulated to date concerning the distribution of trade beads in northwest North America does not contradict the earlier assertion that the appearance of the

green-lined and brown-lined red forms of cornaline d'Aleppo is chronologically prior to that of the clear reds with opaque white interiors. Since the white-lined red forms occur at the Point Site and not at the Knoll Site at Paxson Lake, I think the discontinuity in the distribution of this bead type establishes the Knoll Site occupation as being slightly earlier. There are additional conclusions that can be drawn concerning the relative chronological positions of the two Paxson Lake bead assemblages from comparisons with Taral, but before presenting the results of a re-study of the Taral bead collection, it will be useful to introduce data from archival sources pertaining to American importation of trade beads into southern Alaska during the late nineteenth century.

Possibly the best record from any source of the kinds of glass beads that were imported for the Alaska trade during the last century is contained in the business records of the Alaska Commercial Company. In Table 14, I list trade beads extracted from annual inventories of merchandise on hand at Nuchek Station, the trade center maintained by the Alaska Commercial Company on western Hinchinbrook Island in Prince William Sound. Comparison of trade bead inventories from stations throughout the Kodiak District of the company indicates that the Nuchek bead inventories are especially detailed and descriptive and that the beads sent to this station are representative of the kinds of beads imported by the Alaska Commercial Company to southern Alaska throughout the period of record (1872 to 1901). Moreover, since the station was one of the principal trade centers for the Ahtna during the early

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901.*

April 1, 1872

365 lbs.	Assorted beads

March 19, 1873

80 bundles	Glass beads
120 lbs.	Assorted beads

August 1, 1873

100 lbs.	Assorted beads
23 "	Coral beads
21 "	Long yellow beads
66 "	Long black beads
64 "	Long white beads
66 "	Round cornalines
35 "	Long ruby beads
20 "	Long cornaline beads
300 "	Plain round white beads
300 "	Plain round black beads

April 1, 1874

61 lbs.	Alabaster beads
18 "	Ruby beads
27 "	Assorted beads
200 "	Black and white beads
259 "	" " " "
300 "	" " " "
146 "	" " " "
43 "	" " " "
200 "	" " " "
40 "	Blue and golden beads
25 "	Ruby and blue beads
10 "	Assorted white

[Inventories for 1875 are not available.]

April 1, 1876

9 lbs.	Blue cut beads
18 "	Red cut beads

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901--Continued.

April 1, 1876 (Continued)		
7	lbs.	Small blue beads
20	"	Ruby beads
10	"	Cornaline beads
22	"	Medium black and white beads
110	"	Allabaster [sic] beads
149	"	Round black beads
294	"	" " "
146	"	" " "
263	"	" " "
29	"	Long ruby beads
57	"	Round ruby beads
3	"	Mixed beads
August 29, 1876		
5	lbs.	Red seed beads
9	"	Cornaline beads
6	"	Ruby small beads
5	"	Ruby large beads
21	"	Red and blue cut beads
110	"	Alabaster beads
20	"	Cornaline beads
April 29, 1877		
698	lbs.	Black and white beads
95	"	Long blue beads
30	"	Ruby beads
17	"	Blue cut beads
18	"	Blue cut beads
9	"	Ruby cut beads
19	"	Small white beads
10	"	Small white beads
4	"	Cornaline beads
9	"	Round ruby beads
5	"	Assorted beads
48	"	String beads
18	"	Assorted seed beads
October 1877		
12	lbs.	Red cut beads

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901--Continued.

October 1877 (Continued)

22	lbs.	Blue cut beads
593	"	Round black beads
95	"	Long blue beads
31	"	Small white beads
40	"	Cornaline beads
28	"	Long ruby beads
9	"	Round ruby beads
4	"	Assorted beads
7	"	Assorted small ruby
4	"	Blue and pink beads

April 1, 1878

11	lbs.	Red cut beads
22	"	Blue cut beads
569	"	Black C[opper] R[iver] beads
7	"	Small ruby seed beads
9	"	Cornaline beads
2	"	Blue and pink seed beads

August 16, 1878

11	lbs.	Red cut beads
24	"	Blue cut beads
6	"	Red seed beads
2	"	Blue seed beads
16	"	Cornaline beads
569	"	Copper River beads

April 1, 1879

11	lbs.	Red cut beads
24	"	Blue cut beads
5	"	Red seed beads
1	"	Blue seed beads
10	"	Cornaline beads
541	"	Black Copper River beads

April 1, 1880

10	lbs.	Red cut beads
24	"	Blue cut beads

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901--Continued.

April 1, 1880 (Continued)		
5	lbs.	Red seed beads
3	"	" " "
400	"	Black Copper River beads
242	"	White Copper River beads
April 1, 1881		
1	lbs.	Red cut beads
5	"	Red seed beads
28	"	Assorted seed beads
233	"	White beads
33	"	White beads (round)
52	"	Red cornaline beads
47	"	" " "
397	"	Black beads (round)
April 1, 1882		
½	lbs.	Red cut glass beads
5	"	Red seed beads
24	"	Assorted seed beads
5	"	Red seed beads
66	"	Large white Copper [River] beads
393	"	Round black Copper [River] beads
70	"	Large round beads
September 12, 1883		
663	lbs.	Assorted beads
155	"	Seed beads
April 1, 1884		
659	lbs.	Assorted beads
100	"	" "
154	"	Seed beads
20	"	Seed beads
4	"	Gold beads
September 7, 1885		
[No glass beads are listed.]		

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901--Continued.

April 1, 1886		
	[No glass beads are listed.]	
June 7, 1887		
	18 lbs.	Beads
	15 "	Beads
April 1, 1888		
	[No glass beads are listed.]	
September 15, 1888		
	33 lbs.	Beads
March 31, 1889		
	[No glass beads are listed.]	
August 25, 1889		
	48 lbs.	Beads
April 1, 1890		
	48 lbs.	Beads
March 31, 1891		
	48 lbs.	Beads
July 23, 1891		
	42 lbs.	Beads
April 1, 1892		
	40 lbs.	Beads
	19 pcs.	Fancy bead work
	1 "	....bead work

Table 14. Trade Beads in the Inventories of Nuchek Station, 1872-1901--Continued.

April 1, 1893		
	35 lbs.	Beads
	12 pcs.	Fancy bead work
June 8, 1893		
	1 lot	Beads
[Inventories for 1894 are not available.]		
April 1, 1895		
[No glass beads are listed.]		
April 1, 1896		
[No glass beads are listed.]		
April 1, 1897		
[No glass beads are listed.]		
April 1, 1898		
[No glass beads are listed.]		
April 1, 1899		
[No glass beads are listed.]		
April 1, 1900		
[No glass beads are listed.]		
April 1, 1901		
[No glass beads are listed.]		

*Data sources: ACCRC:Box 131, Folders 1216-1219, with verifications from Kodiak District Inventories ACCRC:Boxes 40-45, Folders 366-390.

American period, it is certain that the Nuchek inventories are indicative of the kinds of beads that found their way into the Copper River area during the late nineteenth century.

Judging from the immense quantities of beads kept on hand and the brisk turn-over in the inventories (Table 14), glass beads were in great demand at Nuchek Station during the 1870s and early 1880s. Clearly, the Alaska Commercial Company imported a diverse assortment of beads from an early date, and since there apparently was no effort to replace all depleted stocks with identical items year after year, these two factors suggest that a proliferation of bead types was imported to southern Alaska after 1872.

A number of entries, however, do occur in the inventories for extended periods. For example, two yearly entries are plain white beads and plain black beads, which are often referred to in the Nuchek and Kodiak District inventories as "Copper River beads"--inexpensive types maintained in immense quantities specifically for the Copper River trade. "Round cornaline" beads and "long cornaline beads" appear for the first time among an extensive list of bead entries in the inventories of 1873 and are specified periodically thereafter until 1883. These undoubtedly are the famous beads from Aleppo, and it is quite interesting that they should appear here in an American trade bead inventory. I think it probable that the "cornaline" entries correspond to the white-lined red forms of these beads, since it seems unlikely that the green-lined and brown-lined reds would have been available from American suppliers at this late date in the century. Moreover,

white-lined red forms of cornaline d'Aleppo have been recovered from undated contexts at the site of Nuchek on Hinchinbrook Island (Ketz n.d.).

"Cut beads," specified as both blue and red in color, appear in the Nuchek inventories between 1876 and 1882. On Woodward's (1959:12) authority, the "blue cut beads" are probably the translucent blue faceted types often referred to as "Russian trade beads," and, thus, the Nuchek inventories apparently confirm a long-held suspicion (Oswalt and VanStone 1967:60) that so-called "Russian beads" cannot be referred exclusively to Russian times in Alaska. "Seed beads" appear in the Nuchek accounts between 1876 and 1885. Seed beads are considered to occur relatively late in nineteenth century sites in Alaska, and, perhaps, as the Nuchek inventories suggest, they were an innovation introduced to Alaska by American traders.

A final general observation worth noting in the Nuchek bead inventories is that, after reaching a peak in 1874, glass beads decline in importance during the late 1880s and early 1890s and, then, disappear completely from the inventories by 1895. This is true for all Alaska Commercial Company stations in the Kodiak District, and it would be of interest to discover whether this development can be corroborated elsewhere in Alaska. I cannot account for the decline of glass beads during the 1890s from information contained in the records of the Alaska Commercial Company and cannot say whether it represents a decline in supply or demand, but the trend would appear to have potential significance for the archeological record, at least in the

Copper River area.

Re-study of the glass beads from Taral indicates that the collection cannot easily be characterized as a late nineteenth century assemblage in its entirety, since all but one bead type from Dakah De'nin's Village are represented in the collection (Table 16).[19] Perhaps these early types were kept by the inhabitants of Taral as "heirlooms" handed down by an earlier generation or are types that persisted in trade bead inventories throughout the nineteenth century, but I am more inclined to think they imply that the site was occupied much earlier than previously supposed. I suspect that the majority of the beads do date from the late nineteenth century, however, and I think that this interpretation is strengthened by comparison of the Taral beads with trade beads listed in the Nuchek inventories.

In Table 15, I present the results of my search for reasonable counterparts of the Taral beads in the inventory records from Nuchek Station. Perhaps the greatest pitfall in this kind of comparative study is that it is never quite certain to what extent beads described in the inventories correspond to archeological types, but, taken as a

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19. In the early 1970s, a burst pipe in the old museum building at the University of Alaska, Fairbanks, sprayed the "vault" with water, destroying paper provenience slips that identified several small archeological collections stored in this area, including the collection from Taral. The Taral collection was eventually re-identified, but it is not certain that all of the glass beads were found. VanStone (1955: 122) mentions that "approximately 300" trade beads were recovered from the site and that the "most common type is a white-lined red bead." I counted 246 (+6 unclassifiable) beads in the Taral collection, only 13 of which represent white-lined red forms.

whole, I think the correspondences listed in Table 14 are too numerous to be simply coincidental. The many different bead types represented in the Taral collection and the appearance of seed beads, specifically pink and blue varieties that directly compare with inventory entries in 1877 and 1878, are compelling reason to assign the majority of the beads from Taral to the late nineteenth century. I would even argue, on the basis of comparisons with the Nuchek inventories, that these beads date largely from the 1870s and 1880s--an interpretation which is consistent with the age assigned to other imported goods in the Taral collection (VanStone 1955:123).

It is particularly significant that seed beads (with diameters less than 2 mm) occur in the Taral collection, but not among the beads from Paxson Lake. Since it is likely that seed beads would have been recovered by the techniques employed in the excavation of the Paxson Lake sites, their absence indicates that both the knoll and the point were occupied prior to the introduction of this bead type into the area and establishes the relative chronological position of both assemblages as being earlier than Taral. The Point Site bead assemblage, then, is both earlier than Taral and, on the basis of the presence of the white-lined red cornaline d'Aleppo, later than the collection from the Knoll Site. Since I indicated earlier that the Knoll Site was occupied later than Dakah De'nin's Village, we would appear to have in the Copper River area at the present time a more or less temporally discrete sequence of glass bead assemblages that span the nineteenth century. The sequence is characterized by gradual additions of new

Table 15. Comparison of Taral Bead Types with Trade Beads Listed in the Inventories of Nuchek Station.

Taral Bead Type	Suggested Nuchek Inventory Counterpart	Date of First Appearance in Nuchek Inventory
Type Ia op white tube; md, lg	Long white beads	1873
Type Ia tr grayish ruby tube; md	Long ruby beads	1873
Type Ia tr grayish turquoise tube; md	?	
Type Ic tr princess blue hexagonal faceted tube; lg	Blue cut beads	1876
Type IIa op white barrel;		
vs	?	
sm, md, lg	Plain round white beads	1873
vl	Large white Copper [River] beads	1882
Type IIa tr grayish rose barrel; vs	Pink seed beads	1877/78
Type IIa op pink barrel; vs	Pink seed beads	1877/78
Type IIa op black barrel; sm, md, lg	Plain round black beads	1873
Type IIa tr blackish blue barrel; md	?	
Type IIa op sky blue barrel; sm	?	
Type IIa tr blue barrel;		
vs	Blue seed beads	1877/78
lg	?	

Table 15. Comparison of Taral Bead Types with Trade Beads Listed in the Inventories of Nuchek Station--Continued.

Taral Bead Type	Suggested Nuchek Inventory Counterpart	Date of First Appearance in Nuchek Inventory
Type IIa op azure blue round; lg	?	
Type IIa op light turquoise; sm, md	Blue and golden beads?	1874
Type IIa cl Capri blue barrel; sm		
Type IIa tr grayish turquoise barrel; sm, md	Small blue beads	1876
Type IIIa op reddish brown over tr pea green tube; sm	?	
Type IIIa cl glass over op white tube; sm, md	?	
Type IIIa tr strawberry red over op white tube; md, lg	Long cornaline beads	1873
Type IVa op reddish brown over op dark reddish brown barrel; sm, md	?	
Type IVa op reddish brown over op-tr pea green barrel; sm, md	?	
Type IVa tr strawberry red over op white barrel; sm, md, lg	Round cornalines	1873
Type WI op grayish blue oval; md	Long blue beads	1877

bead types to later assemblages with the most diverse assortment occurring in the late nineteenth century collection from Taral. A more detailed comparison of the glass beads from Dakah De'nin's Village, the Knoll Site, the Point Site and Taral is presented in Table 16.

Comparative bead studies in interior Alaska are complicated by the fact that, during the nineteenth century, both the Russian-American Company and the Hudson's Bay Company competed for the fur trade of the middle and upper Yukon River region. British influence was particularly important after the establishment of Ft. Yukon in 1847, and from historical sources we know that that influence extended into the Copper River area even after 1869, when Charles W. Raymond advised Hudson's Bay Company officials to remove their establishments from American territory eastward beyond the 141st meridian. Although it has been emphasized that the Russian-American Company obtained the bulk of its supplies, and presumably trade goods as well, from British and American sources after 1800 (Oswalt 1980:104-5, citing Kushner 1975), it seems to me that if we truly believe certain bead types appear later in Alaskan sites than elsewhere in North America, an explanation for this phenomenon will have to be sought in the nature of the trade bead inventories maintained by the great trading monopoly throughout much of its tenure in Alaska. Either the Russian-American Company perceived a rather narrow demand for the kinds of beads deemed acceptable in the Russian American trade and selected beads for importation accordingly, or the company was restricted in the kinds of beads obtainable through suppliers. Presumably, the Hudson's Bay Company

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type Ia	tube; op white (1A1*)				
	medium			2	12
	large				1
Type Ia	tube; tr grayish turquoise (24D5)				
	small	1	4	1	6
Type Ia	tube; tr grayish ruby (12E7)				
	medium				3
Type Ib	hexagonal tube; cl princess blue (20C8)				
	large			2	
Type Ib	marvered tube; cl green (26B7)				
	fragment			1	
Type Ic	hexagonal, faceted tube; tr grayish turquoise (21B6)				
	large			1	
Type Ic	faceted, marvered tube; tr gentian (blue) (21B7)				
	fragment			1	
Type Ic	hexagonal, faceted tube; tr princess				
	large blue (20C8)				1

*Designates color code in the Reinhold Color Atlas (Kornerup and Wanscher 1961).

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area--Continued.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type IIa	barrel; op white (1A1)				
	very small				3
	small	2	5	6	14
	medium			4	6
	large			3	5
	very large				2
Type IIa	barrel; tr grayish rose (12B3)				
	very small				6
Type IIa	barrel; op pink (12A4)				
	very small				13
Type IIa	barrel; op reddish brown (9E8)				
	small		21		
Type IIa	barrel; cl deep red (10C8)				
	small			15	
	large			1	
Type IIa	barrel; tr dark ruby (12F4)				
	small		1		
Type IIa	barrel; op black				
	small			1	3
	medium			7	3
	large			1	1

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area--Continued.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type IIa	barrel; tr blackish blue (20D7)				
	medium				6
Type IIa	barrel; cl Prussian blue (21F7)				
	small		1		
Type IIa	barrel; tr grayish blue (21E6)				
	small			2	
Type IIa	barrel; op sky blue (22A5)				
	small				1
Type IIa	barrel; tr blue (22C8)				
	very small				9
	large				2
Type IIa	barrel; op baby blue (23B3)				
	small		1		
Type IIa	barrel; op azure blue (24A7)				
	small			27	
Type IIa	barrel; op light turquoise (24A5)				
	small				2
	medium				1
Type IIa	barrel; cl Capri blue (24B7)				
	small	1			3

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area--Continued.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type IIa	barrel; tr Capri blue (24B7)				
	small			2	
Type IIa	barrel; tr grayish turquoise (24E7)				
	small	20	3		36
	medium			1	6
Type IIb	round; op grayish turquoise (24B6)				
	large		1		
	very large	1			
Type IIb	round; op azure blue (23A7)				
	large				1
Type IIIa	tube; cl glass over op white (1A1)				
	small		1		1
	medium		1	2	1
Type IIIa	tube; op reddish brown (9E8) over tr pea green (29D5)				
	small				3
Type IIIa	tube; tr strawberry red (10D8) over op white (1A1)				
	medium				1
	large				1

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area--Continued.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type IVa	barrel; cl glass over op white (1A1)				
	small	20	49	13	24
	medium	11	3	35	16
	large		1	4	1
Type IVa	barrel; op reddish brown (9E8) over cl-tr pea green (29D5)				
	small	9	33	20	21
	medium	2	5	1	13
Type IVa	barrel; op reddish brown (9E8) over op dark reddish brown (9F8?)				
	small	5	16	4	
	medium			1	2
Type IVa	barrel; cl-tr strawberry red (10D8) over op white (1A1)				
	small			1	
	medium			4	5
	large			1	6
Type WI	round; op white (1A1)				
	small		1		
	medium			1	
Type WI	oval; op grayish blue (23E6)				
	medium				5

Table 16. Glass Beads from Nineteenth Century Sites in the Copper River Area--Continued.

		Dakah De'nin's Village	Knoll Site	Point Site	Taral
Type WII	facted; cl grayish yellow (1B4) large			1	
	TOTAL	72	147	166	246

brought a different array of bead types to the fore whenever its traders infringed upon the Russian-American Company's sphere of influence, and, after about 1872, American traders imported a wide assortment of trade beads previously unavailable from the Russian company throughout Alaska. These developments perhaps explain the seeming retardation in the distribution of certain bead types in northwest North America during the first three quarters of the nineteenth century and suggest that Russian, British and American traders imported unique assemblages of bead types into the Alaska trade at different times throughout the century.

Whether we will be able to differentiate Russian, British and American bead assemblages in the archeological record is another matter. In this regard, one obvious line of inquiry that will have to be addressed seriously sooner or later is whether the white-lined red forms of cornaline d'Aleppo, so closely associated with the name of the Hudson's Bay Company, are in fact a marker of British contact when found in our area. Although the white-lined red forms are absent, or nearly so, from the bead assemblages from Dakah De'nin's Village, Korovinski and Chirikof, their appearance in Russian levels at Kolmakovskiy Redoubt (Oswalt 1980:137-8) implies that they were imported by the Russian-American Company at some time during the twenty-year interval 1842 to 1866, at least to western Alaska. They were also recovered from American levels at Kolmakovskiy, and there can be little doubt American traders imported the white-lined red beads to Alaska soon after 1872, as also indicated by the Nuchek in-

ventories. We might even imagine that the white-lined red beads from the 1880 level at Cadzow Lake could just as well have been obtained from American as Hudson's Bay Company sources. In sum, we have, as yet, no clear indication from the archeological record to what extent "Hudson's Bay beads" should be considered indicative of direct or indirect British contact when found in sites in interior Alaska.

It is not immediately apparent, therefore, whether the white-lined red cornaline beads recovered from the Point Site at Paxson Lake should be considered of Russian, British or even American importation. I rather suspect the latter, however, since, with the notable exception of seed beads, there are a number of correspondences with bead types from Taral and with entries in the Nuchek inventories. For example, both sites share the simple opaque black beads that I suggested earlier may correspond to the black "Copper River beads" mentioned in the Nuchek inventories (Table 15). The faceted, translucent blue, hexagonal tube bead from Taral that possibly corresponds to the "blue cut beads" in the Nuchek accounts has identical counterparts in the Point Site collection, when minor color differences are ignored. And, of course, both sites share the white-lined cornaline d'Aleppo, which are also represented in the Nuchek inventories. There may be additional correspondences in the Type IIa beads of various shades of blue, but it is not possible at the present time to say how significant the minor color differences among these bead types may be.

As indicated in Table 16, the Point Site collection matches 18 bead varieties in the Taral assemblage, but only nine and seven sub-

types, respectively, among the beads from the Knoll Site and Dakah De'nin's Village. These comparisons suggest a closer relationship between the bead assemblages from the Point Site and Taral than between the Point Site and other collections in the Copper River sequence. I believe that the beads from the Point Site probably are of American importation, at least in part.

The beads from the Knoll Site appear to be largely of Russian importation. The Knoll Site assemblage and the collection from Dakah De'nin's Village share eight bead varieties, and the Knoll Site adds only six new types when size differences are not taken into consideration (Table 16). Only one bead type, a clear, Capri blue specimen, is unique to Dakah De'nin's Village. The single white wire-wound specimen and the Type IIa opaque reddish brown beads in the Knoll Site collection are the only beads for which reasonable counterparts could not be found among the beads from Chirikof Island, Korovinski and Dakah De'nin's Village.

CONCLUSIONS

If we accept the first entry of "seed beads" in the Nuchek inventories as a reliable marker for the appearance of these archeological types in the Copper River area, the Point Site dates prior to 1877. This determination is consistent with the correspondences noted earlier with other beads in the Nuchek inventories, which first appear in the accounts before this date. It is also consistent with the age of the probable pre-1870 ironstone china that was recovered from the

site, considering the usual lag times associated with the deposition of ceramic sherds in archeological contexts (Adams and Gaw 1977). I suggest approximately 1875 as the date of occupation of the Point Site, based on comparisons with the Nuchek bead inventories.

Taking 1855 as the approximate mean date between abandonment of Dakah De'nin's Village (ca. 1838) and occupation of the Point Site (ca. 1875), I offer the 1850s as a reasonable estimate for occupation of the knoll. This reasonably agrees with the earliest known appearance of the white-lined red cornaline d'Aleppo in Russian America (1842-1866) and the likelihood that Christian influences had made no great inroads into Ahtna traditional belief systems until the last half of the nineteenth century. I think the present evidence would allow us to extend the age estimate to include the 1840s, but less probably, the 1860s.

CHAPTER 7. SUMMARY AND CONCLUSIONS

Earlier chapters presented data documenting the season-specific and task-specific nature of the Paxson Lake sites. Specifically, the data indicate a spring occupation and that the initial processing of caribou products, both meat and skins, took place at the sites, with the occupants also likely engaged in trapping as an important ancillary activity. The occupations reflect a single, but crucial, segment of the seasonal round when the inhabitants waited to intercept the annual spring migration of the Nelchina caribou herd.

Formal differences between Cache Pit 1 and the winter caches from the lower Gulkana River were stressed in consideration of the probable differences in the use and function of these two types of storage facilities. Cache Pit 1 and the lower level of Feature 1 likely represent a more ephemeral use of the Knoll Site during late prehistoric or protohistoric time.

Traces of even earlier occupations were identified both at the Knoll Site and the Point Site, and the analysis attempted to demonstrate that these earlier components were the likely source of flaked materials of cryptocrystalline stone represented in historic levels' inventories from both sites. These materials could not be isolated convincingly, save on typological grounds, but their designation as earlier materials unrelated to historic occupation of the knoll and the point is supportable in view of current knowledge of areal prehistory, which indicates that the flaking of cryptocrystalline stone

had been phased out by protohistoric and historic times in the Copper River area. None of the earlier occupations are well represented among the Knoll Site and Point Site data, and my concluding comments will be concerned with historic occupation of Paxson Lake during the nineteenth century.

Before considering the extent that variation in the archeological remains from the knoll and the point reflects the activity-specific and task-specific nature of the sites, it is necessary to assess the position of Paxson Lake within the rapidly changing cultural landscape of the nineteenth century. We are indeed fortunate to have had data available from Dakah De'nin's Village and Taral for comparison, since the suggested dates of occupation of these sites closely bracket occupation of the knoll and the point during the second and third quarters of the nineteenth century. Following final comparisons with Dakah De'nin's Village and Taral, I will summarize the evidence which supports the earlier assertion concerning the cultural affiliation of the inhabitants, and, finally, the overall significance of the described data will be presented in the framework of broadening the archeological conceptualization of nineteenth century Ahtna culture and its implications for a direct historical approach to the study of Ahtna prehistory.

COMPARISONS

Dakah De'nin's Village. Earlier, I noted that the iron knives in the Knoll Site collection, which are nearly identical in form to

copper specimens from Dakah De'nin's Village, represented continuity in metal-working technology. Copper, although present, represents too small a sample to adequately assess use of this material at the Knoll Site, but, in marked contrast to Dakah De'nin's Village, there is only slim evidence to suggest that native copper was worked at Paxson Lake to any extent. Iron had not displaced copper entirely by the time of occupation of the knoll, but imported copper evidently had made significant inroads into local trade in this substance by Knoll Site times. No copper was recovered from House 1 at the point, and all of the metal in the Point Site collection represents fragments of sheet iron, which probably was derived from metal containers. Although our data are far from conclusive about this point, the absence or near absence of native copper at Paxson Lake suggests that imported metals had displaced Native trade in copper sometime around mid-century in the Copper River area.

There are no precise analogues between the Knoll Site and Dakah De'nin's Village in the bone artifacts represented in the respective collections, but certainly we can see parallels in the barbed points and significant continuity in the rather sophisticated manipulation of bone in general. No artifacts of bone or antler were recovered from the Point Site, but House 1 does share sewn birch bark, which probably represents a container, with Dakah De'nin's Village. Among stone tools, there is unmistakable continuity in the boulder spall scrapers represented in the Dakah De'nin's Village, the Knoll Site and the Point Site collections. In the category of imported goods,

only glass beads are present in all three inventories, and the bead analysis indicated that, while continuity is represented in a few bead types common to all three collections, more bead types are shared by Dakah De'nin's Village and the Knoll Site than by Dakah De'nin's Village and the Point Site.

Shinkwin (1979:86) concludes that the artifacts in the Dakah De'nin's Village collection represent a variety of activities: "copper and bone points for hunting and fishing, copper awls and needles for sewing and perhaps for other activities, copper knives for cutting fish, an ivory harpoon head for fishing, chisels for woodworking, boulder spall scrapers for preparing hides, as well as whetstones for sharpening tools, hammerstones, and grinding stones." Representation of a wide variety of activities is certainly not unexpected in the Dakah De'nin's Village artifact inventory, considering that the houses probably were occupied for extended periods during both winter and summer, while at Paxson Lake, the emphasis in skin-working implements, particularly among local manufactures in the Knoll Site artifact collection, seems entirely consistent with the task-specific nature of the site. Although the Knoll Site artifact sample is indeed small, it is no doubt significant that we find represented in the archeological record for the first time examples of bone tools--bilaterally barbed points and serrated bone scrapers specifically--that ethnographic sources indicate are associated with the hunting and processing of large game animals.

The faunal collections from Dakah De'nin's Village and Paxson

Lake are quite distinctive. While a few mammal bones are represented in all levels in the houses, the village faunal collection is dominated by salmon bones, particularly by the large quantity of ribs and vertebrae recovered from a small, bark-lined cache pit in House 2. Although Shinkwin (1979:80) cautions that the remains of larger food animals may be under-represented in the village sample (in consideration of the ethnographic practice of de-boning flesh before transporting meat over long distances), it is nonetheless significant that, in comparison, the Paxson Lake faunal samples contain 99 percent caribou. In contrast with Dakah De'nin's winter village site, the faunal remains from Paxson Lake clearly reflect the inhabitants' preoccupation with caribou hunting.

Differences in the houses at Dakah De'nin's Village and Paxson Lake were discussed in the context of variation in nineteenth century Ahtna houses in Chapter 4. Shinkwin presents compelling evidence that House 2 at Dakah De'nin's Village represents an example of the chief's house, and there can be little doubt that substantial houses with deeply entrenched, attached sweat bath structures characterize Ahtna winter settlements during the nineteenth century. Such settlements were often occupied during the salmon fishing season as well, and the predominance of salmon remains in the village faunal collection is compelling reason to believe that the site was also occupied in summer. Shinkwin (1979:88) concludes that the "location of the site, the oral history about the site, and ethnographic data on the Ahtna all converge with the archeological and faunal remains to sup-

port the interpretation of [Dakah De'nin's Village] site as a summer and winter settlement." Less substantial structures without attached sweat baths characterize the houses at the Knoll and the Point sites, and I think much can be made of the fact that these and other differences are associated with occupation of Paxson Lake during the spring of the year.

Taral. Taral shares boulder spall scrapers, a very similar crooked knife of iron and a unilaterally barbed point made of antler with the Knoll Site at Paxson Lake. Although these parallels are few, they account for half of the locally manufactured goods in the Taral collection, which also includes a bird-bone drinking tube, cut birch bark fragments and rectangular-shaped whetstones. Were it not for the predominance of imported goods at Taral, it might be assumed that the Taral and Knoll Site occupations are closely related in time on the basis of this shared inventory, and, in an earlier discussion, I concluded that the bead types that Taral shares with Dakah De'nin's Village indicate that Taral probably was occupied much earlier in the nineteenth century than had been recognized previously. I think, in fact, the comparative data are best interpreted in light of the historical evidence, which indicates occupation of Taral from at least 1847--surely too long of an occupation to provide meaningful comparisons at the level being pursued here. I am particularly reluctant to associate locally manufactured with imported goods at Taral and to consider the entire collection representative of Ahtna material culture during the closing decades of the nineteenth century.

Despite these problems, imported goods from Taral can be considered a reliable indication of the kinds of trade items that had become available to the Ahtna during the late nineteenth century. In the case of the glass beads, for example, I presented non-archeological sources of data that indicate that the beads are, for the most part, of early American importation. It is significant, therefore, that Taral should have more bead types in common with the Point Site than with the collection from the knoll. It is also significant that, in contrast to the Knoll Site, Taral and House 1 at the point share ceramics, even though the imported china in the respective collections possibly were obtained from different trade sources. Otherwise, the Point Site foreshadows only dimly the variety and quantity of imported goods at Taral.

Surprisingly, sheet iron, well represented by fragments in the Point Site collection, is not represented at Taral, and it is important to note, considering that Taral probably overlaps historic occupation of the Paxson Lake sites, that the collection does not contain evidence of the use of native copper. VanStone does not indicate that faunal remains were recovered during excavation at the site, but, on the basis of the historical evidence, it is possible to conclude that Taral was occupied as a major winter settlement and important summer fishing station long after the Russians abandoned Mednovskaia Odinochka in 1850. Unlike Dakah De'nin's Village, however, it is impossible to say to what extent the archeological remains recovered from Taral reflect the functional nature of the site and the seasons

of its occupation.

In summary, it can be said that, technologically, the Paxson Lake sites are intermediate between Dakah De'nin's Village and an occupation of Taral which extended into the late nineteenth century, and it is now possible, based on comparisons between Dakah De'nin's Village, the Knoll Site, the Point Site and Taral, to note a few trends that characterize nineteenth century developments in the Ahtna area.

Although the Ahtna had relatively easy access to Russian sources of trade goods early in the nineteenth century, imported goods clearly had not had an overwhelming impact upon the material culture of the inhabitants of Paxson Lake by the time of occupation of the Knoll Site. The Knoll Site data suggest that, although imported metals had risen to dominance, they were imported as raw material for local manufactures of quite traditional form and function, while continuity in the manufacture of objects of bone and antler and the use of boulder spall scrapers can only be characterized as denoting marked conservatism. Glass beads dominate the trade goods, as they do at Dakah De'nin's Village, but at Paxson Lake there is indirect evidence that axes or hatchets were now considered acceptable trade items as well. Other categories of imported goods, for example items indicative of a firearms complex, may also be missing in the Knoll Site collection, but, generally speaking, it can be said that, culturally as well as temporally, the Knoll Site stands closer to Dakah De'nin's Village

than does historic occupation of the Point Site.

It is less clear to what extent we should consider the House 1 inventory indicative of the rise to dominance of imported goods by the time of occupation of the Point Site. Imported goods clearly dominate the Point Site collection, but, as I stated earlier, the relative unimportance of local manufactures may simply reflect the fact that few activity areas were sampled during archeological excavations at the site. I think it can be stated with some confidence, however, based on comparison of the Knoll Site, the Point Site and Taral collections, that imported goods had risen to a position of dominance in the Copper River area only during the final quarter of the nineteenth century. Evidently, it was the wide variety of goods brought to Alaska by American traders after 1867 and the intense interest shown in the fur trade during the 1870s, the 1880s and the early 1890s that provided the Ahtna with both the ways and the means to acquire the imported goods that dominated everyday life by the turn of the century. To what extent it can be said that imports had swamped traditional material culture is impossible to say on the basis of the archeological data available from the area, since our knowledge is presently quite fragmentary concerning the persistence of traditional forms and techniques during the closing decades of the century.

ETHNIC IDENTIFICATION AND THE SIGNIFICANCE OF THE DESCRIBED DATA

It is important to reiterate the cultural affiliation of the Paxson Lake sites in consideration of a persistent problem in Northern Athapaskan archeology--namely, the difficulties associated with the recognition in the archeological record of specific cultural groupings of Pacific Drainage Athapaskans and the extension of historic ethnic and linguistic boundaries into the prehistoric past. Fortunately, we have not had to be preoccupied with the problem of establishing the ethnic identity of the inhabitants of the Knoll and Point sites on the basis of the material remains alone. In this case, given the geographical position of the sites, the collateral historic and ethnographic evidence concerning nineteenth century use and settlement of Paxson Lake and the time placement of the respective occupations within the historic period, the most parsimonious interpretation is that the historic occupants of both sites were in fact Ahtna.

There are, therefore, a number of practices and larger cultural patterns represented by the archeological record at Paxson Lake that can now be securely linked with the ethnographic Ahtna and extended back in time well into the nineteenth century. Shinkwin (1979:167) has noted that the recognition of differences in the broad patterns of culture may prove critical in the archeological definition of distinctive bands of Pacific Drainage Athapaskans, and Workman (1976a: 160-2; 1976c:31-4) has demonstrated the utility of a similar approach

in the broad definition of the last 1000 years of areal prehistory as specifically Ahtna prehistory. Here, we will be concerned with the more modest goal of widening the archeological conceptualization of nineteenth century Ahtna culture to include the significant variation represented by the Paxson Lake sites. It is important to pursue the parameters of variation as we encounter specific groups of Northern Athapaskans in the archeological record engaged in different activities during the course of the seasonal round.

On the basis of the archeological data from Paxson Lake, we may add or reaffirm the following cultural patterns and practices as representative of Ahtna culture during the nineteenth century:

1. Caribou Hunting. The Paxson Lake sites provide incontrovertible and detailed archeological evidence confirming the ethnographically documented practice of caribou hunting. Although the present data have suggested little about specific hunting strategies, successful hunters evidently set out from home bases that featured substantial semi-permanent dwellings occupied by family groups over extended periods during the spring of the year. Caribou were certainly taken close at hand, considering that whole carcasses were brought to the sites for initial butchering, and it is entirely possible that hunters dispatched the caribou as the herd crossed Paxson Lake. The sites indicate rather elaborate preparation and planning for the annual hunt and are perhaps best designated

"caribou hunting stations," rather than by either the term "meat camps" or "hunting camps."

Moreover, the variation in house construction, an emphasis in the artifact inventory on skin-working implements, perhaps specialized bilaterally barbed bone points used for hunting large game animals and, during late prehistoric or protohistoric times at any rate, use of a specialized form of cache pit for the storage of caribou products are suggestive of a complex of traits especially adapted to the requirements of caribou hunting. Although I hesitate to define a caribou hunting pattern on the basis of the present data alone, differences between Paxson Lake and Dakah De'nin's winter village site, particularly when the respective faunal collections are included for comparison, suggest that such a construct may prove useful in distinguishing sets of activities pursued by the Ahtna during different periods of the seasonal round.

2. Subsistence-Settlement Patterns. A spring occupation is entirely consistent with generalized subsistence-settlement patterns reconstructed for the Middle and Western Ahtna area, and the adaptive significance of occupation of Paxson Lake during a time of the year often noted for scarcity is obvious. The houses, to the extent that they have allowed reconstruction and interpretation, indicate important variation in this aspect of Ahtna construction, but I

think variation is quite consistent with present knowledge concerning nineteenth century settlement patterns, since the more substantial chief's house has been closely identified to date with major winter settlements along the Copper River. I suggested also that less substantial house construction was probably more appropriate for the Paxson Lake environment. Trapping was likely an important activity pursued by the inhabitants of Paxson Lake, and our data indicate something of the manner in which the demands of the fur trade were successfully adapted to the exigencies of the annual cycle during the nineteenth century.

Aside from the geographical position of Paxson Lake within the traditional hunting territory of the Gulkana-Gakona band and the congruity between the season of occupation and subsistence-settlement patterns reconstructed for the Middle and Western Ahtna during the nineteenth century, there is little evidence to directly link the Paxson Lake sites specifically with people from Gulkana. It would be quite useful to have a more detailed accounting of the seasonal activities of individual Middle and Western Ahtna bands, the social aspects of caribou hunting and the alternatives available to people when the herd failed to arrive at favored localities during the annual migrations. Clearly, we have a great deal to learn about Ahtna caribou hunting strategies and their adaptability to seasonal and long-term fluctuations

in the availability of local caribou resources.

3. Other Practices. Whenever possible throughout the text, comparisons were drawn linking the material remains recovered at Paxson Lake with nineteenth century Ahtna material culture, documented by previous archeological and ethnographic work in the area. I will not repeat them in their entirety here, for no other reason than a simple listing of traits has not served us well as the basis for broader comparative studies. Nevertheless, there are a number of practices represented by the material remains at the Knoll and the Point sites that reflect behavioral patterns that may be considered distinctively Ahtna and, therefore, warrant further elaboration and discussion. Among these, I include the following:

-Funerary Practices. It is noteworthy that the Knoll Site data confirm, not simply cremation of the dead, but the practice of conscientiously collecting the ashes of departed loved ones for later interment. This behavior may well reflect distinctively Ahtna ideas concerning treatment of the dead and deserves further comparative study.

-Incised Pebble Decoration. The incised pebble from House 1 at the Point Site has diagnostic possibilities, but we presently lack comparative material to assess its overall

all significance. Aside from the possible meaning of the motif(s) represented by this unique specimen, the concept of decorating objects of a non-utilitarian nature may have special significance in our area.

-Butchering Practices. It is not yet clear to what extent the faunal sample reflects dietary preferences and preferred methods of primary butchering and secondary bone reduction. Distinctive patterns may be represented here, and additional comparative work seems warranted.

-Refuse Disposal Practices. I indicated that the dumping of hearth sweepings was one process which contributed to the formation of the midden at the Knoll Site, but, clearly, more work needs to be done at the site to determine what other activities and processes contributed to the formation of the deposit and to establish patterns in the use of space for refuse disposal and in the content of what was being thrown away, lost or abandoned. Meanwhile, it is important to stress that refuse disposal is an activity well represented at the Knoll Site, since it is quite likely that similar processes took place at other "living" sites in the area.

Whether these and other behavioral practices represented by the archeological remains at Paxson Lake can be shown to be diagnostic of Ahtna culture must await additional and more refined archeological

investigations in the Copper River area and adjacent regions of interior Alaska, but the congruity which the present data demonstrates between nineteenth century subsistence-settlement patterns and the nature of caribou exploitation at Paxson Lake stands as an immediate contribution to present knowledge and considerably broadens the archeological conceptualization of Ahtna culture during the nineteeth century. In spite of the fact that at Paxson Lake we are confronted with generally small sample sizes, potentially significant categories of data missing due to sampling error and, quite clearly, the attrition of certain traditional forms and techniques as various fashionable and useful imported goods were added to the inventory of material culture, comparisons with Dakah De'nin's winter village site indicate that we can expect significant variation in the archeological record as we encounter specific groups of Ahtna engaged in different activities during the course of the seasonal round. Differences are most apparent in the respective faunal collections and the manner of house construction, but our data also suggest distinct emphases in the composition of the artifact inventories that reflect the task-specific nature of the respective sites. Other differences, notably in the working of native copper, apparently are time-related, reflecting the rise in importance of imported metals during the second quarter of the nineteenth century, but, overall, the Paxson Lake data indicate significant variation in the archeological record that is attributable to the task-specific and season-specific nature of Ahtna caribou hunting strategies. The implications of this determination

are far-reaching both for broader comparative studies and as we attempt to consolidate further our knowledge of Ahtna culture during historic and late prehistoric time: we cannot expect any single site to be totally representative of the dynamic cultural system that has been reconstructed for the nineteenth century or that might be envisioned for late precontact times.

Our data are particularly relevant as the archeology of the Lake Louise Plateau in the Middle and Western Ahtna area is about to be explored. Many of these sites undoubtedly will be related to the exploitation of local caribou resources, and I think they will present an excellent opportunity to test the environmental, ecological and behavioral correlates of the variation indicated by the archeological record at Paxson Lake. Indeed, it is almost mandatory that this be done, if an immediate purpose is to establish continuity between the later prehistory of the area and the cultural present. Such a goal is within reach of present archeological research strategies, particularly if we pursue the broad cultural patterns and behavioral practices that apparently characterize the archeological record during the nineteenth century. I am quite optimistic, given present knowledge of Ahtna archeology, that the later prehistory of the plateau will be characterized by something much more diagnostic and interesting than fire-cracked rock and fragmented caribou bones and that in this record will be found important clues to the origins of late prehistoric Ahtna culture.

REFERENCES CITED

ARCHIVAL SOURCES

Archives and Manuscripts Collections. The Elmer E. Rasmuson Library, University of Alaska, Fairbanks

Alaska Commercial Company Records Collection (ACCRC), 1868-1922. 70 ft. For a description and register of the collection, see Oswalt 1967.

Benedict, Neal D.
The Valdes [sic] and Copper River Trail, Alaska, with 158 Photographic Views. Typescript copyright by Neal Benedict, 1899. In the Vertical File of Small Collections.

Documents Relative to the History of Alaska. Alaska History Research Project, 1936-38. In 15 typewritten volumes.

Rainey, Froelich
"Diary--Upper Tanana 1939 May 23--June 22." Box 1, Folder 25.

Russian-American Company Records (RACR). Microfilm 7. Copy of original made by the National Archives, Washington, D.C. 77 reels.

Correspondence of the Governors General, Communications Sent (CS). All correspondence cited was translated for the author by Katherine Arndt.

Correspondence of the Governors General, Communications Received (CR). All correspondence cited was translated for the author by Katherine Arndt, except No. 1206, Vol. 19, fos. 901-15, 31 August 1851, which is found in Documents Relative to the History of Alaska, Vol. IV, pp. 378-9.

Manuscript Collections of the Bancroft Library, University of California, Berkeley

Chichinov, Zakhar
Adventures of Zakahar Tchitchinoff, an employee of the Russian American Fur Company. Dictation recorded by

Ivan Petroff in 1878 with an explanatory note. P-K 25.

Kostlivtsov, Sergei, ed.
Report of the Committee on the Organization of the Russian American Colonies. Parts I and II. Ms translation by Ivan Petroff, P-K 6:1-2.

Pinart, Alphonse
[Ahtna wordlists from Apollon Ponamaroff]. Alaska Papers, P-K 49, Box 2, Folder 10.

Sokolov, Aleksandr P.
Copper River. Translation of "Rieka Miednaia po opisi Serebrennikova 1847-1848" [Account of the Copper River from Serebrennikov's notes], Zapiski Gidrograficheskago Departamenta, x, 167-77, 1852, by Ivan Petroff(?). HHB, P-K 28:3.

PUBLISHED AND UNPUBLISHED SOURCES

Abercrombie, William R.
1900a Copper River Exploring Expedition [1899]. Washington: Government Printing Office.

1900b A Military Reconnaissance of the Copper River Valley. In Compilation of Narratives of Explorations in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 561-91. Washington: Government Printing Office.

Ackerman, Robert E.
1965 Archeological Survey Glacier Bay National Monument, Southeastern Alaska. Laboratory of Anthropology, Report of Investigations, Part II, No. 36. Pullman: Washington State University.

1968 The Archeology of the Glacier Bay Region, Southeastern Alaska. Laboratory of Anthropology, Report of Investigations, No. 44. Pullman: Washington State University.

Adams, William H., and Linda P. Gaw
1977 A Model for Determining the Time Lag of Ceramic Artifacts. Northwest Anthropological Notes, 11(2):218-31.

Alaska Boundary Tribunal
1904 Proceedings of the Alaskan Boundary Tribunal, Convened at London.... In five volumes. U.S. Senate Document, No. 162. Washington: Government Printing Office.

Alaska Commercial Company Records Collection (ACCRC)
See Archival Sources.

Alaska History Research Project
See Archival Sources.

The Alaskan (Sitka)
1886a "From Kodiak," 17 July 1886, p. 1.

1886b "Our Crippled Judiciary," 6 November 1886, p. 2.

1886c "The Kinick Murder," 6 November 1886, p. 4.

Allen, Henry T.
1887 Report of an Expedition to the Copper, Tanana, and Koyukuk Rivers in the Territory of Alaska in the Year 1885.... Washington: Government Printing Office.

Arndt, Katherine L.
1977 The Structure of Cache Pits at GUL 077, A Late Prehistoric Site near Gulkana, Alaska. M.A. thesis, University of Alaska, Fairbanks.

Bancroft, Hubert H.
1960 History of Alaska, 1730-1885. New York: Antiquarian Press.

Barratt, Glynn R.
1975 The Russian Interest in Arctic North America: The Kruzenshtern-Romanov Projects, 1819-1823. The Slavonic and East European Review, LIII(130):27-43.

Benedict, Neal D.
See Archival Sources.

Birket-Smith, Kaj,and Frederica de Laguna
1938 The Eyak Indians of the Copper River Delta, Alaska. Kobenhavn: Levin and Munksgaard.

Bos, G. N.
1975 A Partial Analysis of the Current Population Status of the Nelchina Caribou Herd. In Proceedings of the First International Reindeer and Caribou Symposium. J.R. Luick et al., eds. pp. 170-80. Department of Biologi-

cal Sciences, Biological Papers of the University of Alaska, Special Report, No. 1. [Fairbanks]: University of Alaska.

Brooks, Alfred H.
1953 Blazing Alaska's Trails. Fairbanks: University of Alaska Press.

Cashman, Edward
1900 A Trip to Woods Canyon. In Compilation of Narratives of Exploration in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 820-25. Washington: Government Printing Office.

Castner, J. C.
1900 A Story of Hardship and Suffering in Alaska. In Compilation of Narratives of Exploration in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 686-709. Washington: Government Printing Office.

Chernenko, M. B.
1967 Lavrentiy Alekseyevich Zagoskin: An Account of His Life and Works. In Lieutenant Zagoskin's Travels in Russian America, 1842-1844: The First Ethnographic and Geographic Investigations in the Yukon and Kuskokwim Valleys of Alaska. H. N. Michael, ed. and transl. pp. 3-34. Arctic Institute of North America, Anthropology of the North: Translations from Russian Sources, No. 7. Toronto: University of Toronto Press.

Chichinov, Zakhar
See Archival Sources.

Clark, Gerald
1974 Archaeological Survey and Excavations along the Southernmost Portion of the Trans-Alaska Pipeline System, 1974. Final report to Alyeska Pipeline Service Company. Ms, 99 pp.

Cook John P., R. R. Newell and W. E. Wiersum
1977 Fish Creek Site (XMH-219). In Archeological Investigations along the Trans-Alaska Pipeline, Book I. J. Cook, ed. pp. 70-180. Fairbanks: Institute of Arctic Biology, University of Alaska.

Cox, Ronald J., C. Hultquist, B. Loudat and J. Maniery
1976 Archeological Excavations at 49-GUL-79 on Paxson Lake, Alaska--1976. Report of the Anchorage District Office of the Bureau of Land Management in conjunction with

the Western Interstate Commission for Higher Education.

Coysh, Arthur W.
1970 Blue and White Transfer Ware, 1780-1840. Newton Abbot [UK]: David and Charles Limited.

Davis, J. L.
1979 Status of Rangifer in the USA. In Proceedings of the Second International Reindeer/Caribou Symposium (Røros, Norway). E. Reimers et al., eds. pp. 793-97. Trondheim: Direktoratet for vilt og ferskvannsfisk.

Davis, Wayne L.
1972 Time and Space Considerations for Diagnostic Northern Plains Glass Bead Types. In Historical Archaeology in Northwestern North America. R. M. Getty and K. R. Fladmark, eds. pp. 3-52. Calgary: University of Calgary Archaeological Association.

Davydov, Gavriil I.
1977 Two Voyages to Russian America, 1802-1807. Translated by Colin Bearne and edited by Richard A. Pierce. Materials for the Study of Alaska History, No. 10. Kingston [Ontario]: The Limestone Press.

de Laguna, Frederica
1956 Chugach Prehistory: The Archaeology of Prince William Sound, Alaska. Seattle: University of Washington Press.

1969/1970 The Atna of the Copper River, Alaska: The World of Men and Animals. Folk: Dansk Etnografisk Tidsskrift (Copenhagen), Vol. 11-12, pp. 17-26.

1972 Under Mt. St. Elias: The History and Culture of the Yakutat Tlingit. In three volumes. Smithsonian Contributions to Anthropology, No. 7. Washington: Smithsonian Institution Press.

1975 Matrilineal Kin Groups in Northwestern North America. In Proceedings: Northern Athapaskan Conference, 1971, Vol. 1. A. McF. Clark, ed. pp. 17-145. Canadian Ethnological Service, Mercury Series, Paper No. 27. Ottawa: National Museum of Man.

de Laguna, Frederica, and Catharine McClellan
n.d. The Atna. Ms, ca. 103 pp. prepared for the Handbook of North American Indians, Vol. 6, Subarctic.

de Laguna, Frederica, and Catharine McClellan
1981 Ahtna. In Handbook of North American Indians, Vol. 6, Subarctic. J. Helm, ed. pp. 641-63. Washington: Smithsonian Institution.

Doerr, Joseph G.
1979a Modeling the Population Decline of Two Alaskan Caribou Herds. In Proceedings of the Second International Reindeer/Caribou Symposium (Røros, Norway). E. Reimers et al., eds. pp. 611-23. Trondheim: Direktoratet for vilt og ferskvannsfisk.

1979b Population Analysis and Modeling of the Western Arctic Caribou Herd with Comparisons to other Alaskan Rangifer Populations. M.S. thesis, University of Alaska, Fairbanks.

[Doroshin, Petr P.]
n.d. Doroshin, a Russian Engineer, Prospected for Gold in Russian America, 1848-1858. Translated with a short introduction by an unknown editor. Translation of "Iz zapisok vedennykh v Russkoi Amerike" [From Diaries Kept in Russian America], Gornyi Zhurnal, 3(iii):365-400, 1866. Ms, 59 pp., Consortium Library, University of Alaska, Anchorage.

Ericson, Jonathon E., and Suzanne P. De Atley
1976 Reconstructing Ceramic Assemblages: An Experiment to Derive the Morphology and Capacity of Parent Vessels from Sherds. American Antiquity, 41(4):484-89.

Fedorova, Svetlana G.
1973 The Russian Population in Alaska and California, Late 18th Century-1867. Translated and edited by Richard A. Pierce and Alton S. Donnelly. Materials for the Study of Alaska History, No. 4. Kingston [Ontario]: The Limestone Press.

Fontana, Bernard L., and J. Cameron Greenleaf
1962 Johnny Ward's Ranch: A Study in Historic Archaeology. The Kiva, 28(1-2):1-115.

Giddings, James L.
1956 "Pillows" and other Rare Flints. Anthropological Papers of the University of Alaska, 4(2):117-20.

1964 The Archeology of Cape Denbigh. Providence: Brown University Press.

Godden, Geoffrey A.
1971 The Illustrated Guide to Mason's Patent Ironstone China. New York: Praeger Publishers.

Golovin, Pavel N.
1979 The End of Russian America: Captain P. N. Golovin's Last Report, 1862. Translated by Basil Dmytryshyn and E. Crownhart-Vaughan. Portland: Oregon Historical Society.

Grewingk, Constantin C. A.
1850 Verhandlungen der Russisch-Kaiserlichen Mineralogishen Gesellshaft. St. Petersburg: Gedraekt bei Carl Kray.

Hadleigh-West, Frederick
1974 The Significance of Typologically Early Site Collections in the Tangle Lakes, Central Alaska: A Preliminary Consideration. In International Conference on the Prehistory and Paleoecology of Western North American Arctic and Sub-Arctic. S. Raymond and P. Schlederman, eds., pp. 217-38. Calgary: University of Calgary Archaeological Association.

1975 Dating the Denali Complex. Arctic Anthropology, XII(1): 76-81.

Hanson, Herbert C.
1958 Analysis of Nelchina Caribou Range. Caribou Management Studies, Project W-3-R-12, Job No. 6. U.S. Fish and Wildlife Service, Federal Aid in Wildlife Restoration, Vol. 12, No. 4. Juneau: Alaska Game Commission.

Hayes, Charles W.
1892 An Expedition through the Yukon District. National Geographic, Vol. IV, pp. 117-162.

Helm, June, T. Alliband, T. Birk, V. Lawson, S. Reisner, C. Sturtevant and S. Witkowski
1975 The Contact History of the Subarctic Athapaskans: An Overview. In Proceedings: Northern Athapaskan Conference, 1971. A. McF. Clark, ed. Vol. 1, pp. 302-49. Canadian Ethnological Service, Mercury Series, No. 27. Ottawa: National Museum of Man.

Hemming, James E.
1971 The Distribution and Movement Patterns of Caribou in Alaska. Wildlife Technical Bulletin, No. 1. [Juneau?]: Alaska Department of Fish and Game.

Hemming, James E.
1975 Population Growth and Movement Patterns of the Nelchina Caribou Herd. In Proceedings of the First International Reindeer and Caribou Symposium. J. R. Luick et al., eds. pp. 162-69. Department of Biological Sciences, Biological Papers of the University of Alaska, Special Report, No. 1. [Fairbanks]: University of Alaska.

Huculak, Mykhaylo
1971 When Russia Was in America: The Alaska Boundary Treaty Negotiations, 1824-25, and the Role of Pierre de Poletica. Vancouver: Mitchell Press.

Hunter-Anderson, Rosalind
1977 A Theoretical Approach to the Study of House Form. In For Theory Building in Archaeology. L. R. Binford, ed. pp. 287-315. New York: Academic Press.

Ianovskii, Semen I.
n.d. Remarks Concerning the Settlement and Diffusion of Trade on the Continental Shore of Northwestern America. Translated for the author by Katherine Arndt. Enclosure to No. 372, RACR, CR, Vol. 4, fos. 417-20, 27 March 1825.

Irving, William N.
1957 An Archaeological Survey of the Susitna Valley. Anthropological Papers of the University of Alaska, 6(1):37-52.

John, Fred, Sr., and Katie John
1973 The Killing of the Russians at Batzulnetas Village. The Alaska Journal, 3(3):147-8.

Kari, James, and Mildred Buck
1975 Ahtna Noun Dictionary. Fairbanks: Alaska Native Language Center, University of Alaska.

Ketz, James A.
n.d. Nuchek Village Site (AA11054). Historical Site and Cemetery Survey, 14(h)(1) Program. Ms on file, Cooperative Park Studies Unit, Anthropology and Historic Preservation, University of Alaska, Fairbanks.

Khlebnikov, K. T.
1973 Baranov: Chief Manager of the Russian Colonies in America. Translated by Colin Bearne and edited by Richard A. Pierce. Materials for the Study of Alaska History, No. 3. Kingston [Ont.]: The Limestone Press.

Khlebnikov, K. T.
1976 Colonial Russian America: Kyrill T. Khlebnikov's Reports, 1817-1832. Translated by Basil Dmytryshyn and E. Crownhart-Vaughan. Portland: Oregon Historical Society.

Kidd, Kenneth E., and Martha A. Kidd
1970 A Classification System for Glass Beads for the Use of Field Archaeologists. Canadian Historical Sites: Occasional Papers in Archaeology and History--No. 1, pp. 45-89. Ottawa: Department of Indian Affairs and Northern Development.

Kitchener, L. D.
1954 Flag over the North: The Story of the Northern Commercial Company. Seattle: Superior Publishing Company.

Koehler, Robert
1900 A Trip to Copper River. In Compilation of Narratives of Explorations in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 607-12. Washington: Government Printing Office.

Kornerup, A., and J. H. Wanscher
1961 Reinhold Color Atlas. New York: Reinhold Publishing Company.

Kostlivtsov, Sergei
See Archival Sources.

Kushner, Howard I.
1975 Conflict on the Northwest Coast: American-Russian Rivalry in the Pacific Northwest, 1790-1867. Westport [Conn.]: Greenwood Press.

Liapunova, R. G., and S. G. Fedorova
1979 Russkaia Amerika v neopublikovannykh zapiskakh K. T. Khlebnikova [Russian America in the Unpublished Notes of K. T. Khlebnikov]. Excerpts translated for the author by Katherine Arndt. Leningrad: Nauka.

Lisiansky, Urey
1968 Voyage Round the World in the Years 1803, 1804, 1805, and 1806. Ridgewood [NJ]: The Gregg Press.

Lowie, P. G.
1900 From Valdez Inlet to Belle Isle, on the Yukon. In Compilation of Narratives of Explorations in Alaska. U.S. Congress, Senate Committee on Military Affairs,

pp. 591-93. Washington: Government Printing Office.

McClellan, Catharine
1964 Culture Contacts in the Early Historic Period in Northwestern North America. Arctic Anthropology, 2(2):3-15.

McKennan, Robert
1959 The Upper Tanana Indians. Yale University Publications in Anthropology, No. 55. New Haven: Department of Anthropology, Yale University.

Morlan, Richard E.
1972 The Cadzow Lake Site (MjVi-1): A Multi-Component Historic Kutchin Camp. Archaeological Survey of Canada, Mercury Series, Paper No. 3. Ottawa: National Museum of Man.

1973a A Technological Approach to Lithic Artifacts from Yukon Territory. Archaeological Survey of Canada, Mercury Series, Paper No. 7. Ottawa: National Museum of Man.

1973b The Later Prehistory of the Middle Porcupine Drainage, Northern Yukon Territory. Archaeological Survey of Canada, Mercury Series, Paper No. 11. Ottawa: National Museum of Man.

Murray, Alexander H.
1910 Journal of the Yukon, 1847-48. L. J. Burpee, ed., Publications of the Canadian Archives, No. 4. Ottawa: Government Printing Bureau.

Okun, S. B.
1951 The Russian-American Company. Translated by Carl Ginsburg. Cambridge: Harvard University Press.

Orchard, William C.
1929 Beads and Beadwork of the American Indians: A Study Based on Specimens in the Museum of the American Indian, Heye Foundation. New York: Museum of the American Indian, Heye Foundation.

Oswalt, Wendell H.
1967 Alaska Commercial Company Records: 1868-1911. College: University of Alaska Library.

1980 Kolmakovskiy Redoubt: The Ethnoarchaeology of a Russian Fort in Alaska. The Institute of Archaeology, Monumenta Archaeologica, Vol. 8. Los Angeles: University of

California, Los Angeles.

Oswalt, Wendell H., and James W. VanStone
1967 The Ethnoarchaeology of Crow Village, Alaska. Bureau of American Ethnology Bulletin 199. Washington: U.S. Government Printing Office.

Pegau, R. E.
1975 Analysis of the Nelchina Caribou Range. In Proceedings of the First International Reindeer and Caribou Symposium. J. R. Luick et al., eds. pp. 316-23. Department of Biological Sciences, Biological Papers of the University of Alaska, Special Report, No. 1. [Fairbanks]: University of Alaska.

Petroff, Ivan
1882 The Limit of the Innuit Tribes on the Alaska Coast. American Naturalist, Vol. 16 (July):567-75.

1900 Population, Resources Etc., of Alaska. In Compilation of Narratives of Explorations in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 55-281. Washington: Government Printing Office.

Pinart, Alphonse L.
See Archival Sources.

Powell, Addison M.
1900 The Gakona and Chestochena Rivers. In Compilation of Narratives of Explorations in Alaska. U.S. Congress, Senate Committee on Military Affairs, pp. 804-7. Washington: Government Printing Office.

1910 Trailing and Camping in Alaska. New York: Wessels and Bissell.

Rainey, Froelich G.
1939 Archaeology in Central Alaska. Anthropological Papers of the American Museum of Natural History, Vol. XXXVI, Part 4, pp. 351-405.

n.d. See Archival Sources.

Reckord, Holly
n.d. Where Raven Stood. Assessment report on the cultural resources, historic sites and cemeteries in the Ahtna Region (in preparation). Cooperative Park Studies Unit, Anthropology and Historic Preservation, University of Alaska, Fairbanks.

Remington, Charles H.
1939 A Golden Cross (?): On Trails from the Valdez Glacier. Los Angeles: White-Thompson.

Russian-American Company Records (RACR)
See Archival Sources.

Selkregg, Lidia, ed.
[1974] Alaska Regional Profiles: Southcentral Region. Sponsored by the State of Alaska, Office of the Governor, in cooperation with the Joint Federal-State Land Use Planning Commission for Alaska. [Anchorage]: Arctic Environmental Information and Data Center, University of Alaska.

Seton-Karr, H. W.
1887 Shores and Alps of Alaska. London: Sampson, Low, Marston, Searle, and Rivington.

Sherwood, Morgan B.
1965 Exploration of Alaska, 1865-1900. New Haven: Yale University Press.

Shinkwin, Anne D.
1977 Archeological Excavations at the Russian Mission, Sitka, Alaska--1975. National Park Service Contract No. CX-9000-5-0075. Ms, University of Alaska, Fairbanks.

1979 Dakah De'nin's Village and the Dixthada Site: A Contribution to Northern Athapaskan Prehistory. Archaeological Survey of Canada, Mercury Series, Paper No. 91. Ottawa: National Museum of Man.

Skoog, Ronald O.
1968 Ecology of the Caribou (Rangifer tarandus granti) in Alaska. Ph.D. dissertation, University of California, Berkeley.

Sloss, Frank H.
1977 Who Owned the Alaska Commercial Company? Pacific Northwest Quarterly, 68(3):120-30.

Sloss, Frank H., and Richard A. Pierce
1971 The Hutchinson, Kohl Story: A Fresh Look. Pacific Northwest Quarterly, 62(1):1-6.

Smith, Barbara S.
1980 Russian Orthodoxy in Alaska: A History, Inventory and Analysis of the Church Archives in Alaska with an Anno-

tated Bibliography. [Anchorage]: Alaska Historical Commission.

Sokolov, Aleksandr P.
See Archival Sources.

Spector, Janet D.
1976 The Interpretive Potential of Glass Trade Beads in Historic Archaeology. Historical Archaeology, Vol. 10, pp. 17-27.

Teben'kov, Mikhail D.
1852 Gidrograficheskiia zamiechaniia k atlasu Sieverozapadnykh beregov Ameriki.... [Hydrographic notes to the atlas of the northwest shores of America....]. Excerpts translated for the author by Katherine Arndt. Sanktpeterburg.

1981 Atlas of the Northwest Coasts of America from Bering Strait to Cape Corrientes and the Aleutian Islands with Several Sheets on the Northeast Coast of Asia. Compiled by Captain 1st Rank M. D. Teben'kov and published in 1852 with Hydrographic Notes. Translated and edited by Richard A. Pierce. Alaska History, No. 21, Maps of Russian America, I. Kingston (Ontario): The Limestone Press.

Tikhmenev, Petr A.
1978 A History of the Russian-American Company. Translated and edited by Richard A. Pierce and Alton S. Donnelly. Seattle: University of Washington Press.

[Tikhmenev, Petr A.]
1979 A History of the Russian American Company. Vol. II: Documents. Translated by Dmitri Krenov; edited by Richard A. Pierce and Alton S. Donnelly. Materials for the Study of Alaska History, No. 13. Kingston (Ontario): The Limestone Press.

Townsend, Joan B.
1974 Journals of Nineteenth Century Russian Priests to the Tanaina: Cook Inlet, Alaska. Arctic Anthropology, XI(1):1-30.

Vancouver, George
1967 Voyage of Discovery to the North Pacific Ocean and Round the World. In three volumes + charts. Bibliotheca Australiana, No. 32. New York: da Capo Press.

VanStone, James W.
1955 Exploring the Copper River Country. Pacific Northwest Quarterly, 46(4):115-23.

1968 Tikchik Village: A Nineteenth Century Riverine Community in Southwestern Alaska. Fieldiana: Anthropology, Vol. 56, No. 3, pp. 215-368. Chicago: Field Museum of Natural History.

1970 Akulivikchik: A Nineteenth Century Eskimo Village on the Nushagak River, Alaska. Fieldiana: Anthropology, Vol. 60. Chicago: Field Museum of Natural History.

1972 Nushagak: An Historic Trading Center in Southwestern Alaska. Fieldiana: Anthropology, Vol. 62. Chicago: Field Museum of Natural History.

1979 Ingalik Contact Ecology: An Ethnohistory of the Lower-Middle Yukon, 1790-1935. Fieldiana: Anthropology, No. 71. Chicago: Field Museum of Natural History.

VanStone, James W., and Joan B. Townsend
1970 Kijik: An Historic Tanaina Indian Settlement. Fieldiana: Anthropology, Vol. 59. Chicago: Field Museum of Natural History.

Veltre, Douglas W.
1979 Korovinski: The Ethnohistorical Archaeology of an Aleut and Russian Settlement on Atka Island, Alaska. Ph.D. dissertation, University of Connecticut. Ann Arbor: University Microfilms International.

Wahrhaftig, Clyde
1965 Physiographic Divisions of Alaska. U.S. Geological Survey Professional Paper 482. Washington: U.S. Government Printing Office.

West, Constance F.
n.d. An Inventory of Trails and Habitation Sites in the Ahtna Region. Ms, 46 pp.

Willey, Gordon R., and Philip Phillips
1958 Method and Theory in American Archaeology. Chicago: University of Chicago Press.

Woodward, Arthur
1959 Analysis of Trade Goods. In A Comparative Cultural Analysis of an Indian Burial Site in Southeast Washington by Roderick Sprague. M.A. thesis, Washington State

University.

1965 Indian Trade Goods. Publication No. 2. Portland: Oregon Archaeological Society.

Workman, William B.
1969 Contributions to the Prehistory of Chirikof Island, Southwestern Alaska. M.A. thesis, University of Wisconsin, Madison.

1976a A Late Prehistoric Ahtna Site near Gulkana, Alaska: 1975 Salvage Excavations on the Ringling Property (GUL 077) Sponsored by Alyeska Pipeline Service Co. Paper presented at the 3rd Annual Meeting of the Alaska Anthropological Association in Anchorage. March 26, 1976.

1976b Archeological Investigations at GUL 077: A Prehistoric Site near Gulkana, Alaska. Ms, 165 pp. Alaska Methodist University.

1976c Ahtna Archeology: A Preliminary Statement. Paper presented at the 9th Annual Conference of the University of Calgary Archaeology Association in Calgary.

Wrangell, Ferdinand P. von
1970 The Inhabitants of the Northwest Coast of America. Translation of "Obitateli severo-zapadnikh beregov Ameriki," Syn Otechestva, Vol. 7, pp. 51-82, 1839, by James W. VanStone. Arctic Anthropology, VI(2):5-20.

1980 Russian America: Statistical and Ethnographic Information. Translation of Statistische und ethnographische Nachrichten uber die Russischen Besitzungen ander Nordwest-kuste von Amerika, In Beitrage zur Kenntniss des Russichen Reiches und der angranzenden Lander Asiens, Band 1. K. E. von Baer, ed. St. Petersburg, 1839. Translated by Mary Sadouski and edited by Richard A. Pierce. Materials for the Study of Alaska History, No. 15. Kingston (Ontario): The Limestone Press.

Yesner, David R.
1980 Caribou Exploitation in Interior Alaska: Paleoecology at Paxson Lake. Anthropological Papers of the University of Alaska, 19(2):15-31.

Yesner, David R., and R. Bonnichsen
1979 Caribou Metapodial Shaft Splinter Technology. Journal of Archaeological Science, Vol. 6, pp. 303-8.

Plate 1. Ceramics and Birch Bark from the Point Site. (a) Reconstructed sherds from an ironstone bowl (interior and exterior views). (b) Fragment of a sewn birch bark basket or tray (463).

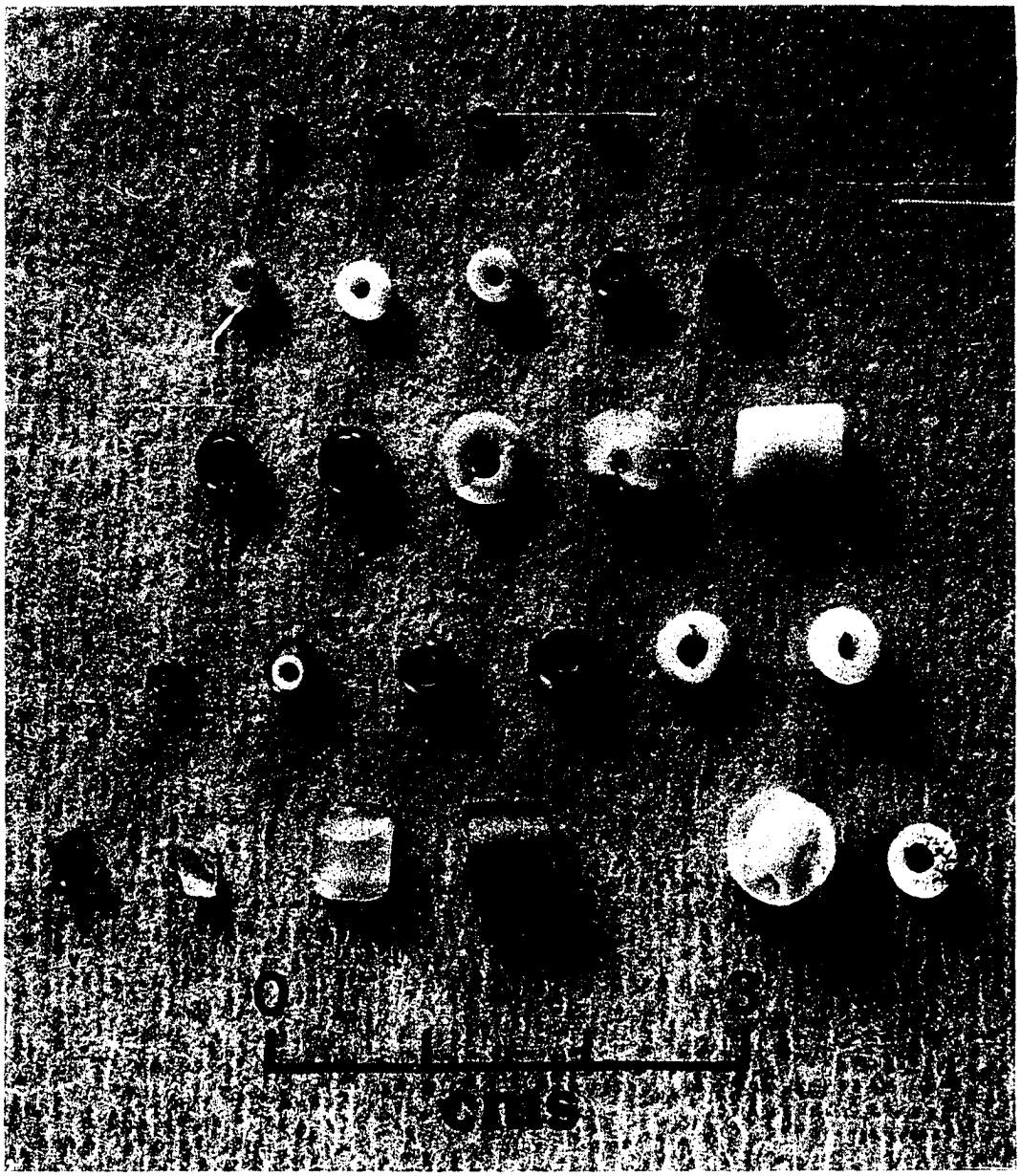

Plate 2. Glass Beads from the Knoll and Point Sites. (a) Type IIa(4) [69]. (b) Type IIa(5) [266]. (c) Type IIa(12) [401]. (d) Type IIa(14) [437]. (e) Type Ia(2) [143]. (f) Type IIa(15) [307]. (g) Type IIa(7) [107]. (h) Type IIa(16) [88]. (i) Type IIa(11) [148]. (j) Type IIa(13) [135]. (k) Type IIa(1) [289]. (l) Type IIa(9) [344]. (m) Type IIa(17) [251]. (n) Type IIb(1) [29]. (o) Type IIIa(1) [86]. (p) Type Ic(1) [322]. (q) Type Ib(1)[320]. (r) Type Ib(2) [323]. (s) Type Ic(2) [351]. (t) Type IIIa(2) [330]. (u) Type IVa(6) [40]. (v) Type IVa(8) [272]. (w) Type IVa(6) [283]. (x) Type IVa(5) [33]. (y) Type Ia(1) [235]. (z) Type WII(1) [315]. (aa) Type WI(1) [24].

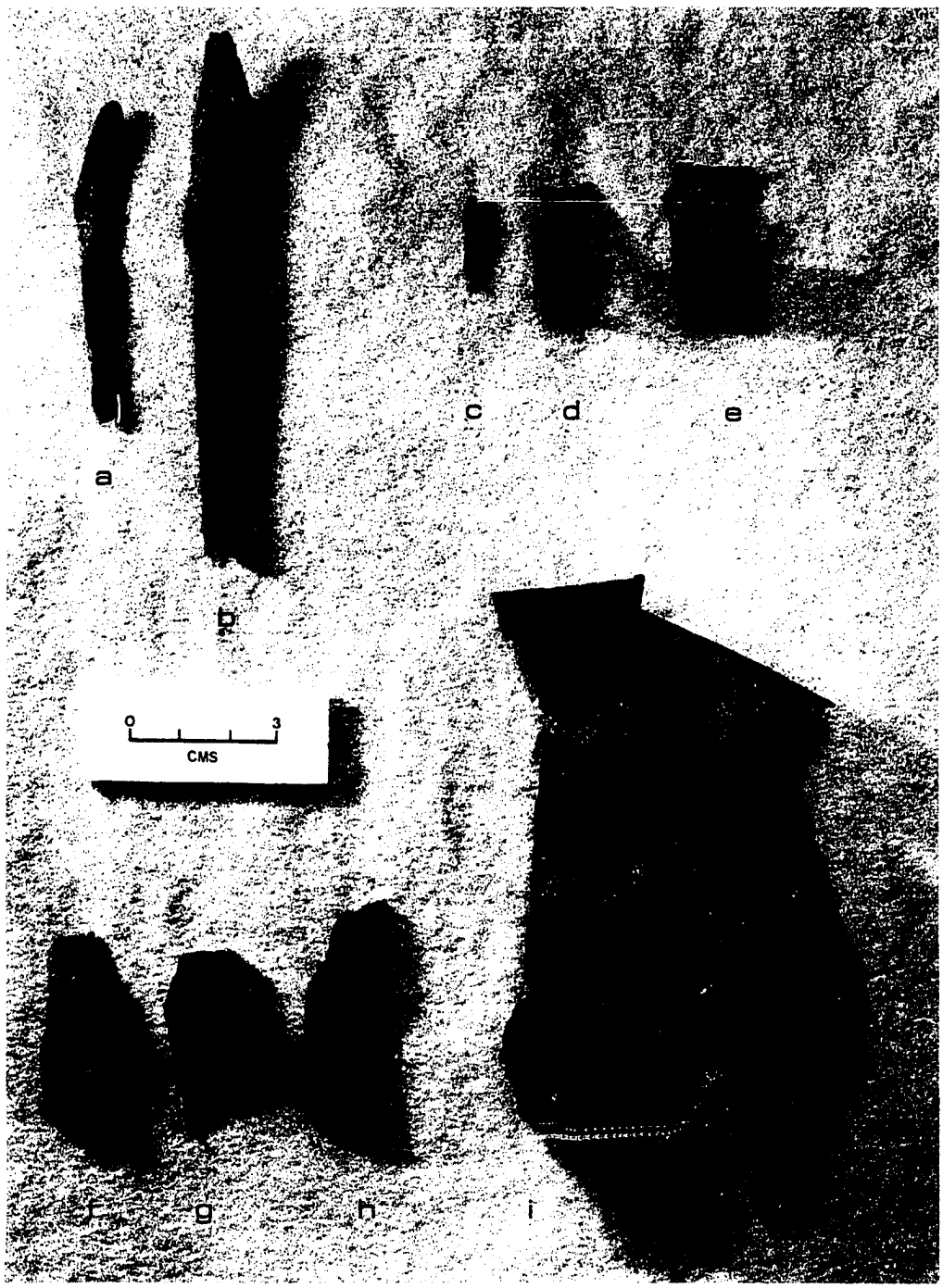

Plate 3. Iron and Copper from the Knoll and Point Sites. Knoll Site: (a, b) crooked knives (206, 221), (c-e) worked and unworked copper fragments (3, 25, 174). Point Site: (f-i) worked and unworked iron fragments (309, 226, 405, 366).

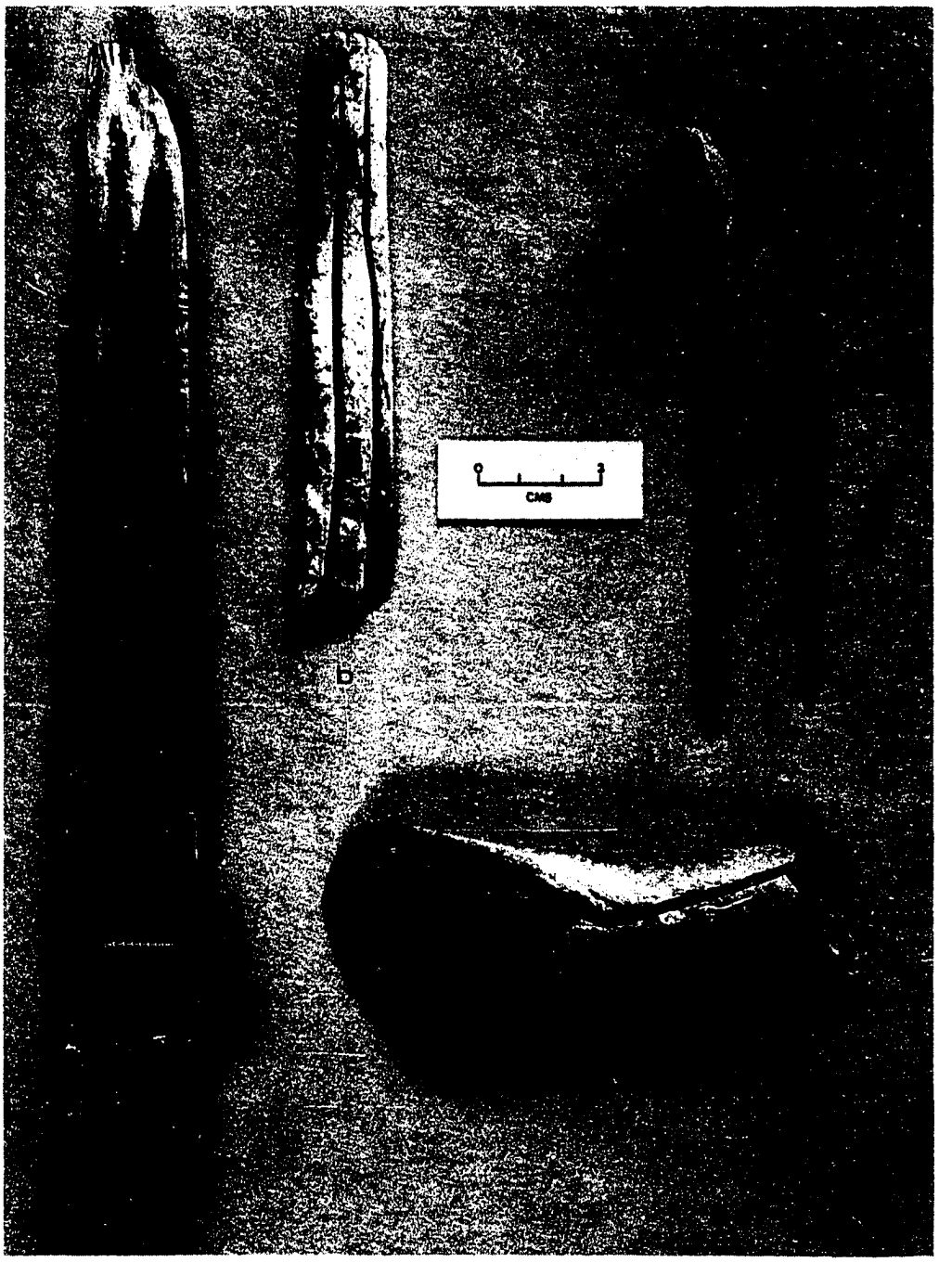

Plate 4. Antler and Bone Artifacts from the Knoll Site. (a) End-of-the-bone scraper (109). (b) Denticulate bone scraper (199). (c) Unfinished unilaterally barbed projectile point (198). (d) Bilaterally barbed projectile point (173). (e) Bone awl tip (92). (f) Spatulate scraper (192).

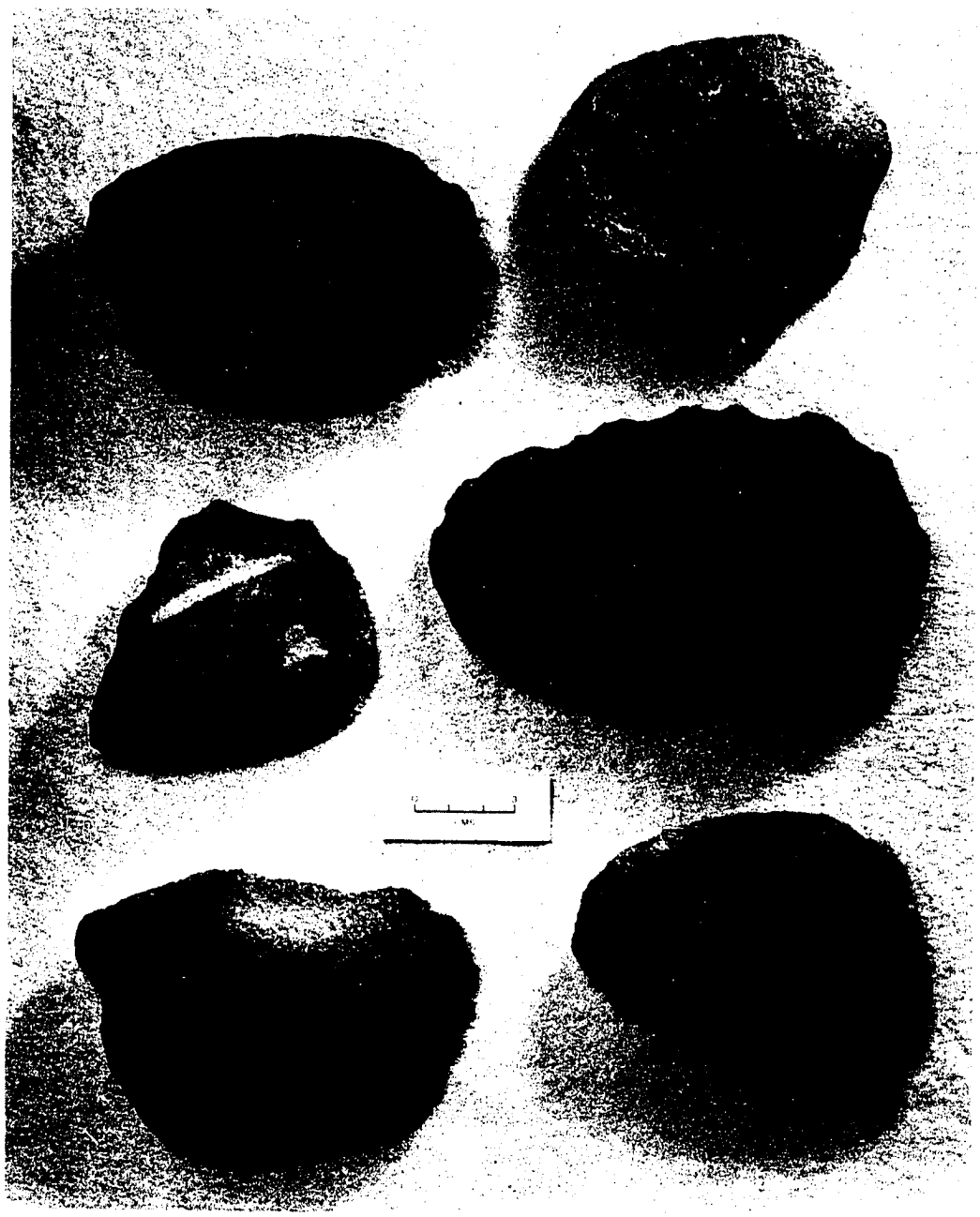

Plate 5. Boulder Spall Scrapers from the Knoll and Point Sites.

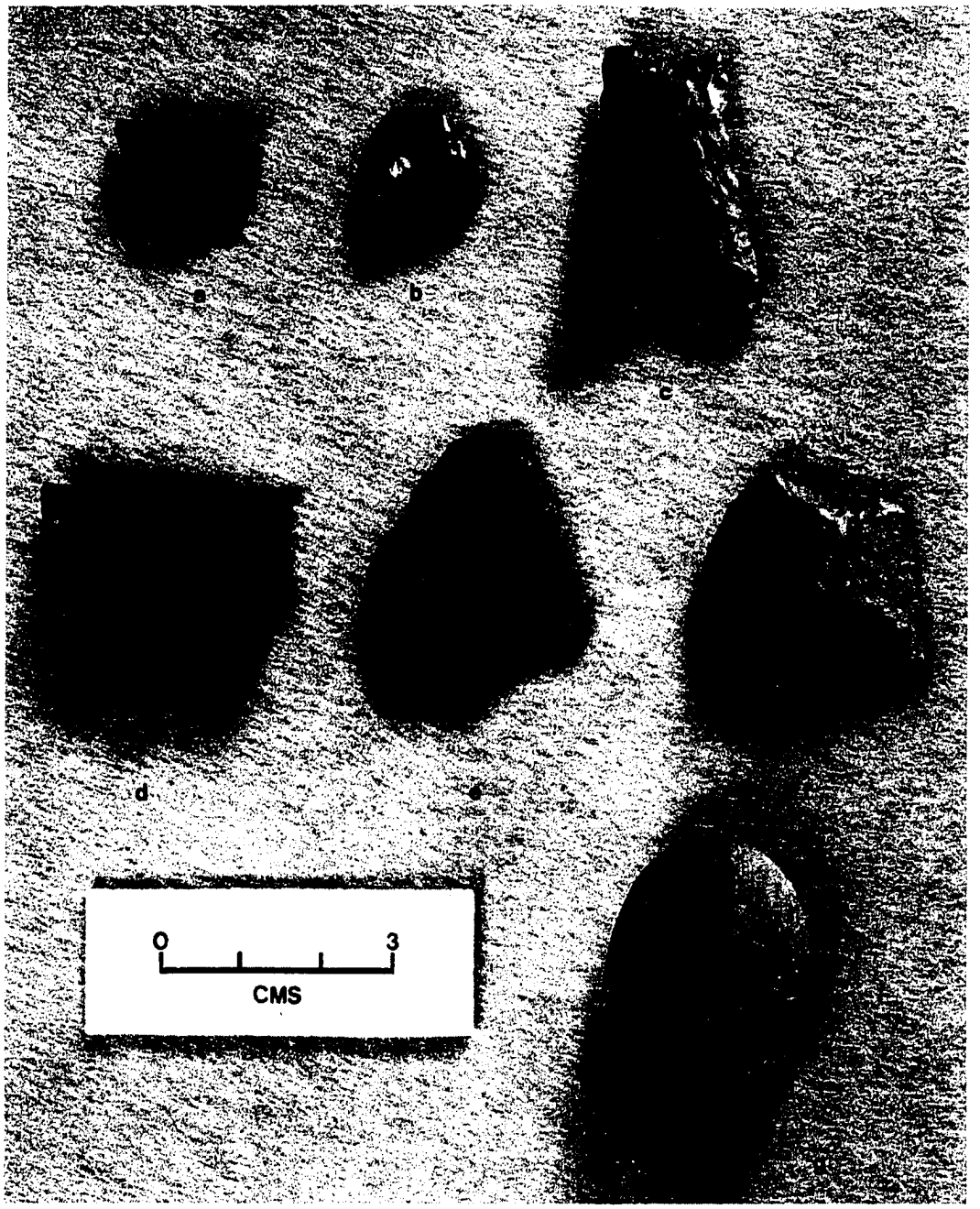

Plate 6. Flaked and Incised Stone from the Knoll Site, Point Site and Surface Collections. Knoll Site: (a) wedge (95). Point Site: (b) obsidian scraper (426), (d) burinated flake (6), (g) incised pebble (227). Surface collections: (c) finished biface (473), (e) retouched flake (474).